

JAMAICA.

ANNUAL REPORT

OF THE

MEDICAL DEPARTMENT

FOR THE

YEAR ENDED 31st DECEMBER, 1938.

Ordered by His Excellency the Governor to be Printed.





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MEDICAL DEPARTMENT.

Report for the year ended 31st December, 1938.

PART I.

I—ADMINISTRATION.

A. PERSONNEL.

1. Director of Medical Services.
2. Assistant Director of Medical Services.
3. Staff.

B. ORGANIZATION.

1. Medical—

(a) *Special Institutions:*—

- (1) Kingston Public Hospital.
- (2) Jubilee Maternity Hospital.
- (3) Mental Hospital.
- (4) Lepers' Home
- (5) Tuberculosis Hospital.

(b) *Provincial Medical Service:*

- (1) 43 Medical Districts
19 with Hospitals
24 without Hospitals
- (2) 76 Dispensaries and a varying number of outstations.

(c) *Staff:*

- 1 Senior Medical Officer, Kingston Public Hospital.
- 2 Resident Medical Officers “ “ “
- 5 Medical Officers “ “ “
- 13 Temporary Medical Officers, Kingston Public Hospital (acting for Medical Officers on leave).
- 1 Radiologist, Kingston Public Hospital.
- 2 Dental Surgeons (part-time) Kingston Public Hospital.
- 1 Senior Medical Officer, Mental Hospital.
- 2 Resident Medical Officers, Mental Hospital.
- 1 Medical Officer, Mental Hospital.
- 1 Temporary Medical Officer, Mental Hospital.
- 1 Resident Medical Officer, Jubilee Maternity Hospital.
- 43 Medical Officers in Districts.
- 1 Medical Officer, Child Welfare Association.
- 6 Assistant Medical Officers, Montego Bay, Port Antonio, Port Maria, Mandeville, St. Ann's Bay and Black River.
- Matrons, Nurses and Probationers, Dispensers in Hospitals and Homes, Clerical and Subordinate Staffs.

2. *Public Health*—(a) *Divisions*:

- (1) Laboratory, Bacteriological and Pathological.
- (2) Communicable Disease Control:
 - (a) Mobile Health Units (Yaws and other Communicable Diseases)
 - (b) Tuberculosis Dispensary and Clinic.
 - (c) Venereal Diseases Clinics.
 - (d) Quarantine Service.
 - (e) Malaria Control.
- (3) Infant and School Hygiene.

(b) *Staff*:

- (1) 1 Assistant Director of Medical Services (Health).
- (2) 1 Bacteriologist and Pathologist.
- (3) 1 Assistant Bacteriologist and Pathologist.
- (4) 20 Medical Officers (Health).
- (5) 1 Port Medical Officer.
- (6) 3 Medical Officers, Venereal Diseases Clinics (Part-time).
- (7) 1 Government Welfare Officer.
- (8) 9 Public Health Nurses.
- (9) 28 Sanitary Inspectors.
- (10) 2 Dispensers, Yaws Units (Mobile Health Units).
- (11) X-Ray Assistants, Field Works, Laboratory Assistants.
- (12) Clerical and Subordinate Staffs.

C.—NEW APPOINTMENTS, TRANSFERS, ETC.

New Appointments—

Dr. D. Glen-Campbell
 Dr. E. S. Hamaty
 Dr. N. Holmes
 Dr. S. R. James
 Dr. L. M. Jacobs
 Dr. A. A. Phillips
 Dr. V. L. Tennant
 Dr. A. A. Wright
 Dr. L. E. Wynter

} Temporary Medical Officers acting for Officers on leave.

Dr. D. I. Cameron, Senior Medical Officer, Mental Hospital.

Dr. Hyacinth Lightbourne, Medical Officer (Health), temporarily assigned to the Yaws Treatment Unit, St. Mary (consequent on leave to Dr. H. D. Chambers).

Dr. G. W. Farquharson, Assistant Medical Officer, Port Antonio

Dr. G. W. Forrester, Assistant Medical Officer, Port Maria.

Dr. G. A. Mais, Assistant Medical Officer, Mandeville.

Dr. C. A. Palmer, Assistant Medical Officer, St. Ann's Bay.

Dr. F. E. Stewart, Assistant Medical Officer, Black River.

Dr. I. E. R. Parris, Medical Officer in charge Male Venereal Diseases Clinic, Kingston (part-time).

Dr. F. B. Stephenson, Temporary Medical Officer, Mental Hospital.

Dr. Muriel Manley, Medical Officer, assigned for duty at the Child Welfare Association, Kingston.

Miss D. M. Harrison, Matron, Jubilee Maternity Hospital.

Mr. J. Mc.C. Salmon, Assistant Dispenser, Kingston Public Hospital.

Rev. J. C. E. Swaby, Chaplain, Kingston Public Hospital.

Transfers—

Dr. A. A. Peat from Medical Officer (Health) St. Ann to Medical Officer (Health) Trelawny and St. James.

Dr. J. I. Rerrie from Medical Officer (Health) Portland to Medical Officer (Health) St. Ann.

Dr. F. W. Aird, from Medical Officer Duncans to Medical Officer, Stony Hill.

Dr. A. I. Foster, from Medical Officer, Balaclava, to Medical Officer, Manchioncal.

Dr. S. G. Grant from Medical Officer, Ulster Spring, to Medical Officer, Balaclava.

Dr. E. S. Greaves, from Medical Officer, Stony Hill, to Medical Officer, Duncans.

Dr. J. F. B. Sanguinetti, from Public Hospital, Kingston, to Medical Officer, Ulster Spring.

Dr. A. St. G. Stephenson, from Medical Officer, Mental Hospital, to temporary Medical Officer, Public Hospital, Kingston.

Dr. C. H. Tomlinson, from Medical Officer, Public Hospital, Kingston, to Medical Officer, Old Harbour.

Dr. C. C. Wedderburn from Medical Officer Yaws Unit to temporary Medical Officer, Public Hospital, Kingston, assigned for duty at the Venereal Diseases Clinic, Kingston.

Dr. K. G. Wilson James, from Medical Officer, Sav.-la-Mar, to Medical Officer, Falmouth.

Dr. C. B. Phillips from Medical Officer, Lower St. Andrew, to temporary Medical Officer, Public Hospital, Kingston.

Dr. G. V. Harry, Medical Officer, Public Hospital, Kingston, to Medical Officer, Montego Bay (consequent on leave to Dr. H. L. Morrison).

Mr. R. T. Gordon, from 2nd Assistant Medical Storekeeper, to Supernumerary Dispenser.

Mr. S. B. Salmon from Dispenser, Hordley, to Dispenser, Black River.

Mr. J. B. Gordon, from Assistant Dispenser, Montego Bay to Assistant Dispenser, Public Hospital, Kingston.

Mr. T. J. Anderson, from Assistant Dispenser, Public Hospital, Kingston, to 3rd Assistant Medical Storekeeper.

Mr. C. H. Seale from Dispenser, Black River, to Dispenser, Hordley.
 Mr. G. P. Edwards, from Dispenser, Buff Bay, to Dispenser, St. Ann's Bay.
 Mr. J. I. Palmer, from Dispenser, St. Ann's Bay, to Dispenser, Buff Bay.
 Mr. S. E. Thomas, from 2nd Assistant Medical Storekeeper to Supernumerary Dispenser, Montego Bay.
 Mr. A. D. Cooper, from Assistant Dispenser, Public Hospital, Kingston, to Supernumerary Dispenser, Black River.
 Miss L. M. Robotham from Matron, Hordley, to Matron, St. Ann's Bay.
 Miss H. M. Pennicott, from Matron, Linstead, to Matron, Hordley.
 Miss V. M. Webster, from Matron, St. Ann's Bay, to Matron, Linstead.

Resignations—

Rev. A. H. Webb, Chaplain, Public Hospital, Kingston.
 Dr. G. E. Valentine, Medical Officer i/c Male V.D. Clinic, Kingston.

Retirements—

Dr. R. F. C. Cooper, Acting Medical Officer, Manchioneal.
 Dr. J. J. Cameron, Senior Medical Officer, Mental Hospital.
 Dr. R. Mott-Trille, Medical Officer, Newport.
 Miss H. J. Tyler, Matron, Mental Hospital.

Promotions—

Dr. E. D. Gideon from Temporary Medical Officer, Tuberculosis Dispensary, Kingston, to Assistant Medical Officer, (Health) Kingston and St. Andrew.
 Mr. L. R. Vaughan from Assistant Dispenser, Public Hospital, Kingston, to 2nd Assistant Medical Storekeeper.

On Leave—

Dr. K. L. Evans, Government Bacteriologist and Pathologist.
 Dr. J. N. McIntosh, Medical Officer (Health), Secretary Quarantine Board, and Port Health Officer.
 Dr. T. B. Sinclair, Medical Officer.
 Dr. H. D. Chambers, Medical Officer.
 Dr. C. E. Vaz, Medical Officer.
 Dr. H. L. Morrison, Medical Officer.
 Dr. H. D. Collins, Medical Officer.
 Dr. Ivan Parboosingh, Medical Officer.

In addition—

The services of Mr. G. B. Rodgers, Supernumerary Dispenser, Montego Bay, were terminated.
 Dr. W. J. Branday, Medical Officer (Health) Trelawny and St. James was seconded for duty as Assistant Government Bacteriologist and Pathologist (consequent on leave to Dr. K. L. Evans, Government Bacteriologist and Pathologist).

(D) FINANCIAL.

Expenditure:

			£	s.	d.
Head XXI—Medical General Administration—					
Personal Emoluments	..	..	27,019	13	8
Other Charges	..	..	4,563	15	11
Head XXI—Part II Medical—Health Service	..	..	
Personal Emoluments	..	..	31,272	7	2
Other Charges	..	..	16,733	11	2
Head XXII—Medical—Hospitals and Lepers' Home—					
Personal Emoluments	..	..	49,402	3	5
Other Charges	..	..	60,729	6	0
Head XXIII—Mental Hospital—					
Personal Emoluments	..	..	26,603	8	10
Other Charges	..	..	20,837	2	4
Total Expenditure	..	..	237,161	8	6
Total Expenditure of the whole Colony	..	..	£2,612,844	0	0
Percentage of Expenditure on Medical Department	..	..		9%	
Revenue from Fees, etc.	..	..	£10,828	1	5

II.—PUBLIC HEALTH AND GENERAL REMARKS.

PUBLIC HEALTH.

The Health of the Island was very satisfactory during 1938. The estimated death rate was 16.3 per 1,000 population as compared with 15.3 in 1937, the lowest on record.

No epidemics were recorded, and the marked reduction in Typhoid Fever noted in 1937, was well maintained in 1938, there being 578 notifications as compared with 781 in 1937 and 1,277 in 1936.

72 cases of Diphtheria were reported as compared with 29 in 1937 and 15 in 1936, but 54 of them occurred in the Corporate Area of Kingston and St. Andrew. The cases were distributed over the year and the increase may be only apparent as a result of the increased activities of the Health Authorities.

1,376 cases of, and 1,083 deaths from Pulmonary Tuberculosis were recorded as compared with 1,311 cases and 1,019 deaths in 1937.

The rainfall was 60 inches—14 inches below average—with the result that the incidence of Malaria was lower than usual and Yaws control was considerably facilitated.

The work of the special clinics for Venereal Diseases established with the assistance of the Colonial Development Fund during the past two years which was necessarily largely experimental and investigatory, makes it clear that the programme of control will have to be enlarged very materially if the problem is to be met with any reasonable degree of effectiveness, and Government was fortunate in obtaining, in the early stages of this undertaking, a month's visit of Lieutenant-Colonel L. W. Harrison, D.S.O., Adviser to the Ministry of Health on Venereal Diseases. Already urgently required alterations and extensions has been completed for the Kingston Clinic as recommended by him, and his other recommendations are receiving the careful consideration of the Government, though lack of funds will delay progress in carrying them out.

Further progress was made in developing and organising a Nursing Service which included Maternity, General and Public Health Activities; and demonstrations are now being carried out in every parish on Pre-natal, Maternity, Infant and School Child Hygiene.

Reports on the results of the Yaws Control programme continue to be favourable and the marked reduction in the incidence of this disease in certain heavily infected areas such as the parishes of St. Thomas and Portland is beyond question.

The new Operating Theatre at the Kingston Public Hospital was put into operation in March, 1938, and the new building for Out-patients and X-Ray work at this Hospital is nearing completion. In the District Hospitals building improvements have been directed mostly at providing facilities for Maternity and Pulmonary Tuberculosis.

It is satisfactory to note, that the Out-door Dispensary Service still continues to meet the increasing demands of the public for these facilities.

GENERAL REMARKS.

The following table shows the comparison of the more important groups of diseases of in-patients in the Hospitals during 1937 and 1938:

Diseases.	1937.		1938.	
	Cases.	Deaths.	Cases.	Deaths.
Diseases of—				
Nervous System ..	738	104	680	114
Eye	752	2	796	..
Circulatory System ..	873	214	893	205
Respiratory System ..	1,758	279	2,123	322
Digestive System ..	6,400	259	5,302	309
Genito-Urinary System (Non-Venereal) ..	4,110	221	4,467	229
External Causes ..	5,410	115	4,591	138

Communicable Diseases—These are dealt with in detail by the Assistant Director of Medical Services (Health) in the following Section on Sanitation.

T. J. HALLINAN,
Director of Medical Services.

III.—SANITATION.

1. ADMINISTRATION.

(a) *Personnel*—Dr. Hyacinth Lightbourne was appointed Medical Officer (Health) and temporarily assigned for duties in the Yaws Unit, St. Mary.

Dr. E. D. Gideon, Temporary Medical Officer, Tuberculosis Dispensary, Kingston, was appointed to act as Assistant Medical Officer (Health) Kingston and St. Andrew.

Dr. W. J. Branday, Medical Officer (Health) Trelawny and St. James, was seconded for duty as Assistant Government Bacteriologist and Pathologist consequent on leave to Dr. K. L. Evans, Government Bacteriologist and Pathologist.

Dr. A. A. Peat, Medical Officer (Health) St. Ann was transferred as Medical Officer (Health) Trelawny and St. James.

Dr. J. I. Rerrie, Medical Officer (Health) Portland, was transferred as Medical Officer (Health) St. Ann.

1. *Parochial Staff*—Table I shews the staff employed by the Local Boards of Health.

TABLE I.

Parish.	Sanitary Inspectors.			Nurses.		Clerks.	Dental Surgeons.	Others.	Vet.
	Chief.	Whole-time.	Part-time.	Whole-time.	Part-time.	Whole-time.	Part-time.	Whole-time.	Part-time.
Kingston	1	15 (13)	..	1	3	1	2	1	1
St. Andrew	1	16 (14)	..	1	9	2	1	1	1
St. Thomas	1	7 (5)	..	..	6	1	..	1	..
Portland	..	3 (2)	3 (2)	3	..	1	1	2	..
St. Mary	..	8 (8)	..	..	6	2	1	2	..
St. Ann	..	9 (9)	..	..	8	1	..	..	..
Trelawny	..	4 (4)	..	..	7	1	1	1	..
St. James	1 (1)	8 (3)	..	5	..	..	1	..	..
Hanover	..	4 (3)	..	..	4	1	1	1	..
Westmoreland	1 (1)	6 (5)	..	1	4	1	..	2	..
St. Elizabeth	1 (1)	4 (4)	..	..	6	..	..	..	..
Manchester	1 (1)	5 (4)	..	6	..	1	..	..	..
Clarendon	1 (1)	9 (4)	..	7	..	3	1	..	..
St. Catherine	1 (1)	7 (2)	6 (4)	2	..	..	1	..	..
Port Royal	..	..	1	..	..	..	..	..	..

There are 12 Medical Officers (Health) in charge of parishes (excluding Port Royal), the Officer in St. Thomas being the only part-time Officer.

The figures in brackets shew the number of persons who hold a Certificate from the Sanitary Inspectors' School or the Royal Sanitary Institute, London.

2. *Staff of Central Board of Health*—Table II shews the staff employed by the Central Board of Health.

TABLE II.

	Medical Officers.	Senior Sanitary Inspectors.	Sanitary Inspectors.	Public Health Nurses.	Health Visitors.	Dispensers.
Mobile Health Units	2	3	13	..	..	2
Malaria	1	..	8	..	..	..
Tuberculosis	3	..	..	..	3	..
Quarantine Board	1	..	1	..	..	..
Communicable Diseases, School Hygiene, etc.	1 (School Hygiene)	..	..	9	..	..

3. *School Dental Clinics*.—The following parishes maintained School Dental Clinics during the year:—

Kingston	Trelawny
St. Andrew	St. James
Port Royal	Hanover
Portland	Manchester
St. Mary	Clarendon
St. Ann	St. Catherine

The Central Board of Health contributed 25% of the cost, except in Kingston, St. Andrew and St. Mary.

3. (b) *Finance*—Table III shews approximately the expenditure of the various parishes for Public Health.

Table III, 1938.

	Kingston and St. Andrew.	St. Thomas.	Portland.	St. Mary.	St. Ann.	Trelawny.	St. James.	Hanover.	Westmoreland.	St. Elizabeth.	Manchester.	Clarendon.	St. Catherine.	Port Royal.	£
Health Officers	a. £ 800														£
Salaries	b. { 650	a. 300	a. 775	a. 800	a. 650	a. † 675		a. 800		a. 800	a. 725	a. 800	a. 800	a. 600	
Health Officers	{ 588														
Travelling Allowances	{ 150	a. 100	a. 150	a. 150	a. 150	a. † 200		a. 200		a. 150	a. 150	a. 150	a. 150		
Sanitary Inspectors.	a. { 150														
Salary	b. 88	{ 997	639	1,153	{ 1,064	430	1,038	326	1,145	464	591	1,145	764	52	
Sanitary Inspectors,	4,062														
Travelling Allowance	866		56	190		75	256	80	150	220	265	150	223		
Clerks	522	78	118.	229	105	148	91	72	96		60	96	83		
Messengers, etc.	45	8	23	27		51		16	52	2	24	14			
Total I.	7,921	1,483	1,761	2,549	1,969	704 † 875	1,385	494 † 1,000	1,443	1,636	1,915	2,355	2,020	652	30,162
2. Cleansing	29,258	809	919	1,856	890	334	1,691	655	323	199	559	323	888	86	
3. I. D. Prevention	769		120	86	254	6	87	462	45	19	3	15	49	10	
4. Cemeteries	1,828	131	166	277	208	28		41	3	5	64	4	139	10	
5. Child Welfare	2,933	185	88	199		119	370	380	388	143	647	388	266		
6. Conservancy	960		1	167	5	32	51		113	1	223	113	144	128	
7. Drainage	1,228	239	304	379	228	94	400	20		20	183		141		
8. Water Supply	250	1,182	621	69	775	2,628	177	280		126	632		518	90	
9. Miscellaneous	2,398	88	347	518	429	58	773	7	199	37	43		413		
Total II	39,624	2,634	2,566	3,551	2,789	3,299	3,549	1,845	1,071	550	2,354	949	2,558	324	67,663
Grand Total	47,645	4,117	4,327	6,100	4,758	4,003 † 875	4,934	2,339 † 1,000	2,514	2,186	4,269	3,304	4,578	976	97,825

a. Salaries and Travelling Allowances of Medical Officers (Health) are paid by Central Government.

b. Salary and Travelling Allowance of School Medical Officer paid by K.S.A.C

c. Duties of Hanover and Westmoreland performed by one Medical Officer (Health).

† Duties of Trelawny and St. James performed by one

The Central Government spent the following amounts on matters affecting the Public Health:—

	£	s.	d.
Salaries of Assistant Director of Medical Services ..	1,000	0	0
Medical Officers (Health) ..	13,218	0	5
and Port Medical Officer £14,818 0s 5d. ..	600	0	0
Salaries of Sanitary Inspectors ..	3,435	0	4
Quarantine Branch ..	1,388	13	8
Bacteriological Branch ..	4,229	11	0
Clerical Staff ..	1,262	8	1
Travelling Expenses of Medical Officers (H) ..	3,507	0	7
Epidemic Measures ..	1,973	17	11
Health Propaganda ..	38	3	10
School Dental Clinics ..	460	8	4
Venereal Diseases Clinics ..	8,518	0	11
Drugs ..	4,790	12	4
Vaccination Fees ..	668	12	7
Yaws Control ..	1,429	9	1
Removal Expenses ..	35	6	3
Training School for Sanitary Inspectors ..	5	13	0
X-Ray Department ..	1,445	0	0
Treatment of T.B. in Kingston ..	3,039	10	11
	£51,045	9	3
Less Reimbursements:—			
Quarantine ..	£1,876	2	0
Bacteriological Branch ..	48	3	6
Venereal Diseases Clinics ..	23	2	6
X-Ray Department ..	342	2	0
	2,289	10	0
Net Cost to General Revenue ..	£48,755	19	3

£1,246 10s. 5d. were spent by the Rockefeller Foundation Special Tuberculosis Studies.

(c) *Legal*—The following Laws affecting Public Health were enacted in 1938:—

No. 38—The Sale of Drugs and Poisons Further Amendment Law, 1938.

No. 39—The Kingston and St. Andrew Corporation Law, 1931, Amendment Law, 1938.

No. 7—The Mental Hospital Amendment Law 1938—A Law to substitute the name “Mental Hospital” for the name “Lunatic Asylum” and to amend the Laws relating to the said Institution.

VITAL STATISTICS.

Population—The estimated population on 31st December, 1938 was 1,173,645.

Birth Rate—37,970 births were registered, giving a rate of 32.35 per 1,000 population. 26,957 of the births were illegitimate.

Death Rate—The crude death rate was 16.3 per 1,000 population.

Infant Mortality—The death rates under 1 year and under 5 years were respectively 129 and 180 per 1,000 live births as compared with 119 and 168 per 1,000 in 1937.

TABLE IV—MEDICAL CERTIFICATION OF DEATHS.

Year.	Total Deaths.	Per Cent. Medically Certified.
1932	18,265	35.8
1933	20,969	37.2
1934	18,731	39.4
1935	19,706	41.2
1936	19,629	42.6
1937	17,481	44.8
1938	19,124	44.7

TABLE V.—Number of Deaths by Parishes from the following causes for 1938.

Parishes.	Estimated Population on 31st December, 1938	Pulmonary Tuberculosis.	Typhoid Fever.	Malaria Fever.	Black Water Fever.	Undefined Fever.	Diarrhoea and Enteritis.	Acute and Chronic Nephritis.	Cancer and other Malignant Tumours.	Infantile Convulsions (under 5 years of age).	Congenital Debility.	Pneumonia.	Old Age.	Syphilis including Brain and Spinal Cord.	Pneumatic Fever.	Intestinal Obstruction.	Appendicitis.	Paralysis of Unstated Origin.	Other ill-defined and unspecified causes.	Total Deaths from causes listed.	Deaths from all other causes.	Total Deaths by parishes.
Kingston	80,195	156	26	36	1	13	70	69	73	16	96	153	105	135	1	17	12	13	6	998	857	1,855
Port Royal	1,111	..	..	..	..	..	2	1	..	..	..	2	..	..	..	..	..	..	..	5	2	7
St. Andrew	63,375	224	8	21	..	79	71	77	45	62	133	37	111	62	16	4	2	46	64	1,057	602	1,659
St. Thomas	51,906	45	5	39	..	132	55	48	6	96	58	37	75	29	1	5	..	31	47	709	297	1,006
Portland	62,250	54	11	25	..	137	13	26	17	27	130	28	89	35	4	2	2	19	66	685	308	993
St. Mary	91,718	71	25	51	..	232	39	77	29	69	145	32	135	26	4	6	1	47	120	1,109	448	1,557
St. Ann	99,016	76	8	24	..	76	48	38	30	79	89	39	171	57	13	9	4	32	75	868	441	1,309
Trelawny	46,332	22	4	15	..	59	31	29	7	89	100	28	74	24	5	6	1	14	38	546	261	807
St. James	57,180	67	20	19	..	149	28	65	25	102	96	61	60	63	7	5	1	11	66	845	295	1,140
Hanover	51,499	30	7	21	..	77	43	41	14	132	58	36	66	37	17	2	1	23	25	630	242	872
Westmoreland	91,508	43	6	59	..	144	30	76	34	142	160	69	104	42	4	6	1	27	49	996	410	1,406
St. Elizabeth	108,511	78	6	52	1	134	28	71	25	292	145	50	171	11	13	7	3	34	51	1,172	466	1,638
Manchester	88,595	64	9	6	..	96	25	43	38	73	90	59	110	49	13	9	1	32	45	762	422	1,184
Clarendon	114,393	62	14	70	2	248	33	81	29	109	127	53	80	31	30	5	1	34	142	1,151	485	1,636
St. Catherine	122,262	91	9	87	..	310	38	79	29	123	213	63	116	35	20	9	3	79	144	1,448	607	2,055
Add excess arrivals over Departures from Census Day 1921 to 31.12.38	1,129,851 43,794																					
Whole Island	1,173,645	1,083	153	525	4	1,886	554	821	401	1,411	1,640	747	1,467	636	148	92	33	442	938	12,981	6,143	19,124
Medically Certified	..	918	147	455	4	6	387	586	350	21	179	700	111	622	20	90	31	94	14	4,735	3,813	8,548

TABLE VI.—NUMBER OF DEATHS BY YEARS FROM THE FOLLOWING CAUSES.

Cause.	1933.	1934.	1935.	1936.	1937.	1938.
Fever not otherwise defined ..	2,824	2,467	2,388	2,243	1,834	1,886
Congenital Debility ..	1,720	1,580	1,764	1,568	1,415	1,640
Infantile Convulsions (under 5 years of age) ..	1,800	1,422	1,502	1,487	1,255	1,411
Pulmonary Tuberculosis ..	1,191	1,113	1,095	1,083	1,019	1,083
Old Age ..	1,576	1,399	1,488	1,577	1,286	1,467
Acute and Chronic Nephritis ..	849	836	876	944	793	821
Pneumonia ..	727	472	778	700	653	747
Various Ill-defined causes ..	1,168	1,036	1,030	1,166	941	938
Malaria ..	513	680	571	677	510	529
Syphilis including Brain and Spinal Cord ..	503	499	655	711	594	636
Diarrhoea and Enteritis ..	785	544	551	547	470	554
Paralysis (of unstated causes) ..	451	395	351	395	339	442
Cancer and other Malignant Tumours ..	312	338	369	338	387	401
Typhoid Fever ..	223	296	267	288	185	153
Rheumatic Fever ..	174	178	163	140	151	148
Intestinal Obstruction ..	63	72	72	97	108	92
Appendicitis ..	46	39	48	44	42	33
Total ..	14,925	13,366	13,968	14,005	11,982	12,981
Deaths from all other causes ..	6,044	5,365	5,738	5,624	5,499	6,143
Total deaths in the Island ..	20,969	18,731	19,706	19,629	17,481	19,124
Deaths Medically Certified ..	7,800	7,395	8,118	8,366	7,831	8,548
% of deaths Medically certified ..	37.2%	39.4%	41.2%	42.6%	44.8%	44.7%

COMMUNICABLE AND INFECTIOUS DISEASES.

Table VII shews the notification of Infectious Diseases for the year by Months and by Parishes.

TABLE VII.

	Typhoid Fever.	Chicken Pox.	Dysentery.	Leprosy.	Cerebro-Spinal Meningitis.	Erysipelas.	Diphtheria.	Scarlet Fever.	Puerperal Fever.	Polio-myelitis.	Pulmonary Tuberculosis.
By months—											
January	35	30	11	2	3	1	4	7	1	..	123
February	66	76	3	2	1	2	11	..	2	..	103
March	37	166	22	6	4	2	7	..	8	1	134
April	57	46	27	3	..	1	3	1	4	..	104
May	60	26	16	1	1	..	1	..	3	..	132
June	58	32	24	1	..	1	6	2	1	1	137
July	37	14	21	1	..	2	12	..	2	..	115
August	39	12	7	3	2	1	3	..	2	..	122
September	41	7	7	6	..	1	7	..	1	..	108
October	50	11	12	2	1	1	8	..	5	..	89
November	50	4	9	10	..	..	3	..	3	..	108
December	48	19	2	5	1	2	7	..	2	..	101
Total	578	443	161*	42	13	14	72	10	34	2	1,376
By Parishes—											
Kingston	74	182	111	2	3	1	39	1	..	1	439
St. Andrew	37	37	16	4	1	..	15	..	1	..	158
St. Thomas	16	3	1	..	..	..	..	..	1	..	65
Portland	46	36	4	1	..	1	..	..	3	..	81
St. Mary	84	43	7	2	..	4	..	..	2	..	72
St. Ann	45	8	4	5	..	2	5	1	6	1	97
Trelawny	14	14	..	4	1	..	1	3	3	..	27
St. James	45	17	4	2	..	1	1	..	2	..	100
Hanover	18	2	..	2	2	..	1	..	7	..	26
Westmoreland	21	31	..	2	1	1	7	..	..	..	39
St. Elizabeth	23	6	1	9	4	2	..	4	..	..	59
Manchester	27	16	1	4	..	2	..	1	..	..	52
Clarendon	52	8	2	3	..	..	3	..	3	..	76
St. Catherine	76	40	10	2	1	..	..	..	6	..	85
Port Royal	..	..	..	..	..	..	..	..	..	..	..
Total	578	443	161	42	13	14	72	10	34	2	1,376

*Amoebic 139
 Unclassified 20
 Bacillary 2

Enteric Fever—578 cases and 153 deaths were recorded as compared with 781 cases and 185 deaths in 1937, the steady decrease of recent years being well maintained. No epidemics were recorded.

32,166 anti-typhoid inoculations were given as compared with 32,454 in the preceding year. 11,842 new latrines were completed and 16,501 repaired. It is the policy to carry out mass inoculations in any district where a case occurs, and also to inoculate school children as a routine because this group provides some 30% to 35% of the notified cases.

Outstanding progress was made in improving both the quantity and quality of the water supplies of the larger towns. In the Corporate Area of Kingston and St. Andrew, the Water Commission completed installation of a new thoroughly modern purification plant with a capacity of 8,000,000 gallons to replace one of their worn out plants. New Works were completed at a cost of approximately £36,000 for the towns of May Pen, Chapelton, Montego Bay and Lucea, while works estimated at approximately £30,000 are in hand for Morant Bay, Buff Bay and Brompton.

Within the past two years the policy has been laid down that no schemes for water supplies will be approved unless adequate provision is made for a high sanitary quality.

Special mention must also be made of the developing use of deep wells for domestic supplies as well as for agriculture. The Kingston Supply has recently been augmented by two such wells, installed by the Water Commission, one at Long Mountain 80 feet deep with an output of 4 million gallons per day, and the other at Montgomery Corner 247 feet deep with an output of 900,000 gallons per day. They are both operated with the most modern electrical equipment, and the former has an automatic chloramine apparatus.

Excellent progress was also made by the Commission during the year on development and improvement of the Sewerage System of Kingston. The Sewerage of Rae Town was completed, and work was progressing on the Sewerage of Smith Village (as a part of the first Housing project of the Central Housing Authority) a Sewerage for the Corporation Poor House, new disposal plant and the mid-level intercepting sewer.

Since January, 1937, the Water Commission has put in hand new construction work with respect to water supply and sewerage disposal, for a total cost of approximately £200,000.

Tuberculosis—Table VIII shews the recorded Annual Island case rates and death rates from Pulmonary Tuberculosis for the 10 year period ended December, 1938.

Table VIII.

Year.		Case Rate.	Death Rate.
1928	.. ..	96.6	128.9
1929	.. ..	102.2	126.3
1930	.. ..	107.3	128.6
1931	.. ..	127.7	140.1
1932	.. ..	123.2	118.0
1933	.. ..	114.8	110.1
1934	.. ..	127.7	101.4
1935	.. ..	125.5	98.5
1936	.. ..	127.6	95.1
1937	.. ..	113.7	88.4
1938	.. ..	117.2	92.3

55% of the total cases notified, were found in the adjacent parishes of Kingston and St. Andrew, St. Catherine and Clarendon within convenient reach of the new Tuberculosis Hospital with 220 beds, which is nearing completion.

The main progress in control of tuberculosis during the year was in the direction of meeting the urgent need for beds. The programme laid down by Government in 1936, provided for 400 beds, of which 80 are now available in special wards recently completed at the District Hospitals at St. Ann's Bay, Linstead, Lucea, Sav-la-Mar, Port Maria and Mandeville, and another 50 are provided temporarily in Kingston. These beds are primarily for cases suitable for active medical and surgical treatment. Local Boards of Health also provide a total of approximately 168 beds in Poor Houses primarily for advanced pauper cases, but in the main owing to lack of funds local authorities have not been able to provide an adequate standard of accommodation and nursing for these cases. These beds are very useful, however, for prevention by removal of indigent cases from poor homes where it is impossible to provide any degree of segregation.

The new Kingston Tuberculosis Dispensary was opened early during the year, and over 5,000 persons attended for the first time for examination. This Unit notified 476 cases of Pulmonary Tuberculosis 35% of the total notified for the Island. The nurses paid 4,188 home visits, 4,485 sputum examinations were made, and the following procedures were carried out, artificial pneumothorax inductions and refills 6,824, Phrenic avulsion 40, Internal Pneumolysis 72, Thoracoplasty 27, slow but steady progress is being made in developing a home supervision of infected families in rural areas. Government has initiated the establishment of a Public Health Nursing Service by provision of one nurse to each Parish Board which will furnish a travelling allowance. So far nine Boards have accepted the scheme and these nurses are carrying out demonstrations on several health activities including Tuberculosis visiting.

The population of a rural parish varies from 50,000 to 120,000 scattered over a wide mountainous area so that this service will have to be developed very considerably to be reasonably adequate.

Yaws—The following Table shews the incidence of active cases found in areas of high endemicity by the two special Mobile Yaws Treatment Units.

Table IX.—Incidence of Yaws in parishes of high endemicity.

	Clarendon.	St. Eliz.	St. Mary.	Portland.	Total.
Population Census ..	6,202	13,956	20,030	31,063	71,251
No. with Yaws lesions ..	503	1,300	1,942	1,298	5,043
Percentage with Yaws lesions	7.6	8.88	8.94	3.17	7.15

Work in the parishes of Clarendon and St. Elizabeth was undertaken for the first time by a special Treatment Unit. In St. Mary the districts covered included several which were originally covered very thoroughly by a Unit in 1933 for research purposes and followed up for nearly 2 years. In these districts the remarkable reduction formerly obtained in incidence of active yaws has generally been well maintained. New adjacent areas, however, shew a high incidence and this gives ground for the view that under present-day conditions yaws tends to spread only slowly from district to district.

The work of the Unit in Portland was completed in August, 1938. During the remainder of the year the Medical Officer (Health) carried out re-surveys and states in his Annual Report as follows:—

“By the end of the year, 15,673 persons were censused of whom 219 were found infected; treatments administered numbered 822. The infection rate has been maintained at a low level—the existing rates varying from 0.1 to 4.5 with an average of 1.4%. Prevalence of the disease in the parish is now one-tenth of what it was before effective control measures were adopted. At the close of the year, all areas were completely censused except that of Fellowship, whilst four areas received treatment—two of these being successfully completed.”

MALARIA.

As in the previous year, the rainfall of 1938 was below average, and control work was well maintained. 525 deaths were recorded as compared with 672 in 1936 and 504 in 1937. Progress was made particularly with the programmes for filling and drainage which were laid down in the previous year. The stretch of former coastal swamp at Greenwich Farm and Kingston Pen has now been reduced to a very small proportion while plans have been put in hand for extending westward from this area a system of drainage to cover a large part of the coastal swamp which stretches for several miles to the Ferry River. The scheme is also designed to remove excess irrigation and storm water from the higher levels along the Spanish Town Road. The built up areas of Kingston are rapidly extending westward for both industrial and residential purposes and adequate development of permanent measures against mosquito breeding are essential.

The West Indies Sugar Company have instituted extensive drainage on their estates in the parish of Westmoreland. Valuable filling of a swamp near the town of Sav.-la-Mar was begun by the Parochial Board with refuse and already some of the reclaimed land is being used for offices.

Extension of control by "temporary" measures was developed in the area of the Milk River Baths and St. Thomas ye Vale.

LEPROSY.

25 cases were notified during the year, at the end of the year there were 279 known lepers in the Island of whom 160 were in the Lepers' Home.

The report of the Medical Officer in charge of the Lepers' Home will be found in Section V (F).

VENEREAL DISEASES.

Records of treatment of Venereal Diseases during 1938, are as follows:—

	Admissions.		Outdoor.	
	Syphilis.	Gonococcal Infections.	Syphilis.	Gonococcal Infections.
Kingston Public Hospital ..	443	304	4,501	1,625
District Hospitals ..	1,161	856	4,721	3,027
Kingston Venereal Diseases Clinic ..	..	..	3,720	6,262
Montego Bay Venereal Diseases Clinic ..	..	..	1,057	1,050
Port Antonio Venereal Diseases Clinic ..	..	..	714	884

Colonel L. W. Harrison, Adviser to the Ministry of Health in Venereal Diseases visited the Island for one month and submitted a report to Government, which included recommendations for certain changes in the construction and equipment of clinics and in treatment technique. The Kingston Clinic was remodelled, and certain other recommendations made by Colonel Harrison are being carried out, with great improvement in the thoroughness and rapidity of work.

A considerable number of cases of Gonorrhoea were treated with May and Baker 693 and Uleron, the former gave most encouraging results.

FOOD SUPPLIES.

Health Officers report 339 dairies under supervision, 173 being in the Corporate Area of Kingston and St. Andrew; owing to lack of laboratory and field staff it has not yet been possible to develop laboratory examination of milk. However, steady improvement continues in the conditions of production and distribution of milk especially in the Corporate Area of Kingston and St. Andrew.

A modern Slaughter House is under construction in Kingston, a total of 83,752 inspections of meat were recorded, 35,482 being in the Corporate Area and the weight of meat condemned was approximately 34,000 lbs.

Inspection of food supplies in grocery stores and bakeries was well maintained. Attention was called to the generally inferior quality of salted fish being imported, but it is evident that one reason is the inability of the mass of the population to pay for better quality.

MATERNITY AND CHILD WELFARE.

With the aid of the developing Public Nursing Service Medical Officers (Health) outside the Corporate Area have been undertaking inspection of School Children on a limited scale. Most of the inspections are carried out by the Nurses themselves and a certain proportion of the children are seen by the Doctors as well.

A total of 8,386 children were examined with the following results:—

No. in poor nutritional condition ..	25%
No. with Head Lice ..	6%
No. with Granulated Lids ..	12%
No. with Defective Vision ..	5%
No. with Dental Caries ..	25%
No. with Enlarged Tonsils ..	25%

The numbers found with Enlarged Spleens are not shown as these vary considerably from area to area depending on the incidence of Malaria. From general experience it is probable that at least 70% of children in Rural areas harbour worms. The incidence of Yaws also varies markedly depending on the districts.

Dr. Whitbourne, the School Medical Officer for the Corporate Area, give the following information:—

"There were 22,500 on the roll of 69 schools with an average attendance of 18,000. Of these 35 schools with a population of 12,000 children are placed on the Liguanea Plain, the remainder on the mountains.

"The buildings vary with the resources of the religious denomination which controls them, some are frail and tottering, others are substantial, many are held in Churches. Of Government Schools, 14 in number, one-half are housed in concrete buildings.

"All the schools with two or three exceptions are overcrowded. At St. Anne's School, for example, the floor space per child is only 3.4 sq. feet, at Ebenezer School 6.2 sq. feet.

"The water supply is not always adequate, even in Kingston. There are still many large schools which provide only 1 or 2 taps for the use of hundreds of children. Hand basins and soap are to be found in less than one-half the number of schools.

"Cleanliness (body and clothes) was good in Kingston and satisfactory in St. Andrew. Vermin have never been found on any child.

"Such clinical manifestations of avitaminosis as perleche, glossitis, stomatitis, salivation, were found in about 20% of children. A combination of the two conditions is common.

"As a result of special attention given to cases of nutritional Optic Atrophy the incidence of this condition has dropped from 8% in 1934 to 1.5% in 1937.

"The nutritional state of the children fluctuates greatly with season apparently depending on fruit crops.

"The number of children examined annually is as follows:—

	1934.	1935.	1936.	1937.	1938.
No. of children examined ..	2,475	5,095	4,921	3,475	1,999
Percentage with malnutrition ..	44.0	37.5	38.0	40.4	56.2
Percentage with Eye Diseases ..	33.4	34.2	39.4	42.7	34.2
Percentage with Diseased Tonsils and Adenoids ..	19.0	14.9	22.4	19.7	24.9
Percentage with Dental Caries ..	34.2	35.0	30.0	39.0	37.3

A complete Report is to be found in Section X, Part I of this report.

Further observations on the subject are given in the remarks on Nutrition below.

CONTROL OF NURSING HOMES.

Law 9 of 1934 provides for the control of Nursing Homes which includes registration and requirements as to accommodation, equipment, Nursing Staff, keeping of records and reporting of cases and deaths. Inspections are carried out by the Medical Officers (Health) and there has been marked improvement in the standards of the smaller Nursing Homes and elimination of a number which were found to be unsatisfactory in various respects.

At the end of the year there were twenty-six on Register, the majority being in Kingston. Two new homes were registered during the year and one was removed from the Register.

NUTRITION.

This subject is engaging the attention of the three Departments most intimately concerned, namely, the Medical, Agricultural and Educational, and it has been receiving considerable publicity in the public press.

Under the auspices of the Nutrition Committee the Medical Department carried out economic surveys in all parishes covering 1,400 families with a view to ascertaining some fairly exact information as to the dietary habits and food purchasing power of the working classes. Lack of special staff for dealing with the material collected has delayed completion of the study.

In approaching the problem the Medical Department is aiming at development of special services for expectant mothers and children up to school-leaving age in elementary schools. These services are fairly well advanced in the Corporate Area of Kingston and St. Andrew. Here the Jubilee Maternity Hospital with 100 beds and 2,500 deliveries per annum (approximately 50% of the total births of the area) maintains an ante-natal department reaching the majority of the mothers delivered in the hospital. The Child Welfare Association, a voluntary organization with headquarters in Kingston is subsidised by Government by the provision of a Medical Officer as well as an annual cash contribution. The Kingston Clinic reports for 1938 that 1,524 expectant mothers paid 3,209 visits to their ante-natal sessions, and there were 21,095 attendances of children up to 5 years of age. The Clinic works in co-operation with the Maternity Hospital, and the great majority of their mothers are delivered in the Hospital. No outdoor nursing service is yet provided for either institution, but it is hoped that this will be established in the coming year. In the meantime voluntary lady workers provide a limited visiting service.

A nucleus for a Public Health Nursing Service has been established during the past two years on a co-operative plan between Central and Local Parish Health Authorities, the former providing the nurse's salary and the latter her travelling allowance. So far nine parishes have got one nurse each. In each case the provision of a nurse has made it possible for the Health Officer to carry out demonstrations in rural areas on (a) prenatal care, (b) infant hygiene, (c) school hygiene. The Child Welfare Association has also established a number of branches outside of Kingston in co-operation with the local Health Authorities. Government has set out to local Authorities a policy to be followed for developing nursing services, and in the two parishes, Manchester and Clarendon, where good progress has been made in and after this there has been a marked increase in the number of deliveries by registered midwives.

Continuous publicity is being given to the subject of Nutrition through the Bulletin of the Bureau of Health Education and lectures by Health Officers.

The Mission of Friends, a Quaker organisation includes child welfare in their programme and has an American qualified Public Health Nurse.

Certain important activities of relatively recent development in the Agricultural Department and the Jamaica Agricultural Society are having a beneficial effect in meeting some of the problems of nutrition, and these Agricultural authorities are fully conscious of the importance of the subject. Included in the programme of the Agricultural Department are (a) Research work with the assistance of the Colonial Development Fund on local varieties of pulse crops and on analysis of soils with a view to increasing local supplies of vegetable protein (b) fostering development of vegetable crops of "protective" value for both export and local consumption, such as green vegetables, for which our poorer classes formerly had very little taste. These Departments' overseas marketing development are being of very great value, not only economically, but they are already effecting increased local consumption of such portions of these "protective" crops as are not suitable for export.

The Department is also investigating the possibility of organising the fishing industry which could make a most valuable addition to the supply of animal protein for the poorer classes who can obtain only an extremely limited quantity thereof for economic reasons.

The Jamaica Agricultural Society, a Government subsidised organisation with 319 branches and a staff of Agricultural Instructors, co-operate in the marketing developments of the Agricultural Department undertaking several activities of direct value to the cause of improved nutrition. Its sales of seeds, at extremely low prices, of such vegetables as tomatoes, carrots, turnips, sweet peppers, beet, etc., have quadrupled in recent years and reached £800 in 1938. The Society encourages improvement of milking strains in goats with subsidies, and by means of competitions it endeavours to interest Juveniles in vegetable growing and rearing of small stock. It now operates a corn mill for the locally grown articles in view of the large importation of cornmeal, and is hulling native rice for distribution through its Sales Department.

Government is supporting the establishment of a condensary which should stimulate the development of the dairy industry and make milk more available by lowered prices to the poorer groups of population.

The Education Department is giving special attention to the development of School Gardens, Kitchen-garden projects and lunch schemes, and in the process of revision of the syllabus, hygiene has been brought up to date. During the past two years 30 kitchen-garden projects have been established in rural schools. In Kingston supplies of hot lunches are reaching 20 schools from the Children's Lunch Fund which is such a promising voluntary effort that Government is subsidising it to the extent of £600 per annum.

Housing—Rapid progress was made by the Central Housing Authority in carrying out its first scheme in Kingston. This scheme provides for improvement of the slum areas in Smith Village with development of a new model township in Trench Pen. This Authority is now considering a similar scheme in the case of the town of Montego Bay, and various Local Boards of Health are giving consideration to proposal for submission to the Authority. The work of this Authority is the subject of a separate report.

J. M. HALL,

Assistant Director of Medical Services.

IV.—PORT HEALTH WORK.

Report of the Quarantine Officer for the year 1938.

The year has been normal and no serious outbreaks of quarantinable diseases have occurred, but the countries which were infected at the end of 1937, with Plague and Yellow Fever still continue to be infected.

An outbreak of Small Pox in Venezuela was reported. As, however, that country was already under the Small Pox Regulation, no further action was necessary, the Regulations in force being rigidly carried out.

There were a few cases of Small Pox in Guadeloupe, French West Indies, but prompt measures for the vaccination of the entire population were taken, and there was no further spread of the disease.

An outbreak of Jungle Fever which seems to be the same or a form of Yellow Fever was reported on the border of British Guiana and Brazil, and in order to protect the health of British Guiana an Inspection Station was placed on the main road leading from Brazil into British Guiana. This appears to have been successful as no outbreak in British Guiana has been reported. A Medical Commission was sent to the scene of the outbreak and remained there several days, but no new cases occurred. Forty-five blood specimens were taken and 6 showed positive results, indicating that the six had had Jungle Fever at a recent date and recovered.

Yellow Fever still persists in the northern states of Brazil. It is also reported in the Republic of Colombia, in the Province of Santander, and has appeared at one district about thirty miles from the Magdalena River. The Medical Officers in the district are satisfied that the disease is Yellow Fever, but there are some peculiarities attached to it. For instance, diligent search has failed to find the *Aedes Aegypti*, the usual mosquito carrier of Yellow Fever, but it has been claimed recently and with justification that there are other species of the mosquito which carry the disease. Another peculiarity of this type of Yellow Fever is that it is found in the forest districts only, and no cases in the towns of Colombia have so far been reported.

The greatest vigilance is being exercised here, in regard to this type of disease in Colombia, as once it appears on the Magdalena, it might be only a matter of days or weeks when cases might appear at Barranquilla or Puerto Colombia. In fact passengers now arriving here from Barranquilla or Puerto Colombia have to report for medical inspection for six days, the usual period of incubation.

A case of suspected Yellow Fever was taken off a vessel at Guadeloupe, French West Indies. The man died, and specimens sent to the Pasteur Institute were reported as Negative to Yellow Fever.

There have been no cases of a quarantinable nature arriving on vessels during the year. Passengers arriving from certain countries have to show marks of recent successful vaccination, or a certificate that they are immune, or submit to vaccination on arrival here.

There have been no cases of Yellow Fever at Barranquilla, but the greatest vigilance is exercised in regard to arrivals of airplanes from there. Airplanes are fumigated on each voyage while in flight between Barranquilla and Kingston.

At the Harbour Head Air-base there is approximately one plane per day. The greatest co-operation is received from the Pan-American Airways and inspection is carried out promptly and efficiently.

The preparation of the ground on the Palisadoes for an airplane base is well advanced and will soon be ready for the erection of the buildings. The site chosen for the aerodrome is the best in the Harbour. Further up beyond the seaplane base might be slightly more sheltered, but this advantage is more than counter balanced by the fact that the planes would have to cross the road, and therefore the present site is really the best. 371 seaplanes arrived during the year.

The quarantine Regulations in Kingston have been efficiently and thoroughly carried out during the year. At the Outports the Quarantine Regulations are carried out at the various ports of the parish under supervision of the Health and Visiting Officer, who is also the Medical Officer of Health for the parish and inspection discloses that this work is being efficiently done.

116 vessels arrived at the Outports during the year. 1,406 ships arrived at Port Royal during the year and were promptly and efficiently dealt with. A considerable number of vessels stopped at Port Royal for bunkering. These are under the supervision of the Port Medical Officer at Port Royal who is responsible that the Quarantine Regulations are promptly and efficiently carried out.

During the year Dr. McLean and Captain List were on leave, but have again resumed their duties as members of the Quarantine Board.

Dr. J. N. McIntosh, the Secretary of the Quarantine Board and Port Health Officer for Kingston, went on leave in May and his duties were carried out by the retired Secretary of the Board, Mr. Charles Don, and the inspection of sea planes at Harbour Head by Dr. Davidson. Dr. McIntosh returned at the latter part of November, but unfortunately had to go again on leave on the ground of ill-health. His duties are being performed as above.

The Quarantine Staff have carried out their duties efficiently during the year.

14 vessels were fumigated with Hydrogen Cyanide during the year, and £77 17/- collected for fumigation fees, and lodged in the Treasury.

Rats are captured at various wharves along the the sea front in Kingston and examined for plague. Among those captured during the year, none were found to be plague infected.

The Quarantine Station is in good condition and can receive persons sick of quarantinable diseases or detained for observation at a moment's notice.

The Quarantine launch has required extensive repairs during the year and arrangements for further repairs are now being made. The purchase of a new launch cannot much longer be delayed as the Quarantine Board cannot allow the probable detention of vessels through a breakdown of the launch.

The telephone service to Port Royal which was originally a non-party line became for a couple of years a party line, and the service could not be regarded as satisfactory. A new non-party line has now been installed between Kingston Exchange and the Port Medical Officer, Port Royal, and while not yet first-class, it is only a matter of time when the few faults will be remedied and good service may then be expected.

Quarantine Fees earned and lodged in the Treasury during the year were as follows:—

			£	s.	d.
Kingston	..	..	1,311	0	6
<i>Outports—</i>					
Port Royal	..	..	400	6	0
St. Thomas	..	..	39	2	6
Portland	..	..	69	9	6
St. James	..	..	2	2	0
Total Overtime Fees			£1,822	0	6
Fumigation Fees			77	17	0
Total Quarantine Fees			£1,899	17	6

CHARLES DON,
Actg. Secretary, Quarantine Board.

V.—HOSPITALS AND DISPENSARIES.

The following is a list of the Hospitals and Institutions of the Medical Department:—

			Official No. of Beds.
Public Hospital, Kingston	..	..	380
Jubilee Lying-in Hospital	..	..	100
Mental Hospital	..	..	2,059
Public General Hospital, Morant Bay	..	..	32
Do. do. Herdley	..	..	40
Do. do. Port Antonio	..	..	75
Do. do. Buff Bay	..	..	54
Do. do. Annotto Bay	..	..	64
Do. do. Port Maria	..	..	71
Do. do. St. Ann's Bay	..	..	42
Do. do. Cave Valley	..	..	14
Do. do. Falmouth	..	..	41
Do. do. Ulster Spring	..	..	8
Do. do. St. James	..	..	72
Do. do. Lucca	..	..	58
Do. do. Sav.-la-Mar	..	..	88
Do. do. Black River	..	..	76
Do. do. Mandeville	..	..	53

	Official No. of Beds.
Public General Hospital, Chapelton	35
Do. do. Lionel Town	54
Do. do. Spanish Town	74
Do. do. Linstead	60
Lepers' Home, Spanish Town	120

BUILDINGS.

At the Kingston Public Hospital, the new Operating Theatre has been in operation since March, 1938. All the necessary covered ways have also been completed and put in use. The new building for Out-patients and X-ray work at the Kingston Public Hospital is rapidly progressing towards completion. Not only will it add to despatch and comfort in handling the ever increasing number of patients but as another step in the modernising programme steadily pursued at this Hospital. This attractive building will also add much to the general appearance of the Hospital.

In the District Hospitals, building improvements this year have been mostly in the direction of providing increased facilities for maternity work and for the treatment of Pulmonary Tuberculosis. Maternity Wards have been put in operation at Lucea, Black River, Lionel Town, Spanish Town and Montego Bay, making a total of 10 Public General Hospitals outside of Kingston now provided with this Service.

Four new Tuberculosis Wards at District Hospitals with a total accommodation of 72 beds were completed during the year. The Central Tuberculosis Hospital in the Corporate Area is in advanced stage of construction, with two large Wards of 100 beds each, two Private Wards of 11 beds each, and accessory buildings and it is hoped that the Hospital will be ready for service in another six months.

A new scheme for development of Hospital facilities has been approved by Government. The policy decided on is that Hospital accommodation in selected main centres of population will be considerably enlarged either by new Hospitals or extension of existing ones, while the number of Cottage Hospitals will be established in more remote centres primarily as feeding stations. A service of ambulances will collect cases from the feeding stations daily and transport them to the main hospitals.

OUTDOOR DISPENSARY SERVICE.

The total attendances of out-door patients under the Out-door Dispensary System, excluding the Kingston Public Hospital, was 254,507 as compared with 221,987 in 1937. Six Dispensaries were opened during the year.

T. J. HALLINAN,
Director of Medical Services.

(A)—*Report and Return of the Senior Medical Officer, Kingston Public Hospital.*

The incidence of Enteric Fever shows a decrease by 41 cases over 1937.

The death rate is lower by 34 in spite of moribund and chronic cases that are being brought in daily by the Ambulance and which have to be admitted.

I beg to draw attention to the great number of Out-patients—excluding the Departments of Radiology and Venereal Clinic—treated for the year; this number, which is 243,069, represents an increase of 51,532 when compared with last year's figures. On this number an amount of £5 1/- was collected by the Ticket System for the year. I am still of the opinion that sixty per cent. of these Out-patients can afford to pay, even if six pence is charged for treatment and medicine for each visit. If this procedure had been adopted, only those who are really sick would attend and the number would be decreased by thousands. Owing to this free treatment, I am of the opinion that it is being abused and will continue until the Ticket System is abolished and a permanent Almoner is attached to the Hospital.

Since the introduction, during the latter part of the year, of painless extractions, the attendance at the Dental Clinic has increased by 2,518 and will continue to do so during the coming year. Dr. Machado was appointed Assistant Dentist during the year.

The necessity for an Isolation Hospital has been felt to a greater extent than ever this year owing to the difficulty of affording proper isolation and nursing facilities for such cases in this Institution.

The erection of the new Out-patients Department is being carried out.

Forty-four Nurses passed their final examination; three of these were from the St. Joseph's Sanatorium. Ten students qualified as Dispensers.

Staff Nurses C. Dobson and C. Crawford were promoted Sisters.

The usual lectures to the Nursing Staff were given throughout the year.

The Board of Visitors held their Quarterly meetings with inspections of the Institution.

I have to express my thanks to all those who sent books, magazines, etc., for the use of the patients.

His Excellency the Governor inspected the Hospital on 24th August, and on 23rd December, Lady Richards distributed toys to the children in the Nuttall Wards.

I deeply regret to record the death of the late Governor, Sir Edward Denham, who died in this Hospital on 2nd June.

I also regret the death of Nurse V. Recas in the Railway accident at Balaclava on the 30th July.

Finally, I have to record my appreciation of the co-operation of the entire staff of the Institution in the performance of their respective duties during the year under review.

TABLE I.

	Males.	Females.	Total.
Patients remaining in hospital, 1st January, 1938 ..	190	140	330
Patients admitted during the year 1938	4,521	3,779	8,300
Total patients treated ..	4,711	3,919	8,630
Of those were cured	1,467	1,491	2,958
Of those were relieved	2,253	1,680	3,933
Of those were not relieved ..	369	272	641
Of those died	408	340	748
Remaining in hospital, December, 1938	214	136	350
	4,711	3,919	8,630

TABLE II.

Daily average number of beds occupied by male patients	220
Daily average number of beds occupied by female patients	168
Average stay in days of those who died, males	9
Average stay in days of those who died, females	8
Average stay in days of males discharged	19
Average stay in days of females discharged	20
Average stay in days of males remaining at end of year	24
Average stay in days of females remaining at end of year	22
Longest stay in days of any one patient	365

TABLE III.

Patients who died within the following hours after admission:—

12		24		48		72		Total.	
Male.	Female.	Male.	Female.	Male.	Female.	Male	Female.	Male.	Female.
82	58	68	56	43	33	31	29	224	176

Table IV.—No. of Patients from Countries and Parishes.

Countries.	No.	Parishes.	No.
Africa	1	Kingston	5,750
America	3	St. Andrew	2,303
Arabia	1	Port Royal	16
Australia	1	St. Thomas	81
Canada	1	Portland	32
Cayman	12	St. Mary	55
China	9	St. Ann	26
England	64	St. James	14
Finland	1	Trelawny	9
Greece	3	Westmoreland	13
Haiti	2	St. Elizabeth	18
India	25	Manchester	26
Jamaica	8,486	Clarendon	45
Norway	7	St. Catherine	149
Scotland	5	Hanover	7
Sweden	6	Foreign	86
Syria	3		..
Total	8,685	Total	8,685

Table V.—Diseases and Deaths in the Kingston Public Hospital during 1938.

	Cases.	Deaths.
I. <i>Epidemic, Endemic and Infectious Diseases</i> —		
Enteric Fever	96	21
Malaria	523	19
Chicken Pox	4	..
Measles	31	..
Scarlet Fever .. ..	..	..
Whooping Cough	8	..

	Cases.	Deaths.
Diphtheria	23	3
Influenza	56	..
Miliary Fever	2	2
Mumps	1	1
Dysentery—		
(a) Amoebic	56	2
(b) Bacillary	2	2
(c) Other or unspecified	9	1
Leprosy	1	..
Erysipelas	1	..
Acute Poliomyelitis	1	..
Cerebro-Spinal Meningitis	..	..
Yaws	11	..
Tetanus	24	15
Tuberculosis (all forms)—		
Respiratory System	118	21
Central Nervous System	4	3
Intestines and Peritoneum	10	1
Vertebral Column	17	1
Joints	13	1
Other Organs	9	..
Syphilis	425	29
Congenital Syphilis	18	9
Gonococcal Infection	304	1
Gonorrheal Ophthalmia	9	..
Granuloma Venereum	163	1
Septicaemia	8	5
II. <i>General Diseases not included in I—</i>		
Cancer:		
Pharynx, Oesophagus, Stomach, Liver and Annexa	25	13
Peritoneum, Intestines and Rectum	6	1
Female Genital Organs	28	3
Breast	7	..
Skin	3	..
Other or unspecified organs	25	3
Tumours not returned as malignant (Brain and female organs excepted)	34	1
Chronic Rheumatism and Arthritis	23	..
Pellagra	6	..
Diabetes	114	23
Pernicious Anaemia	9	1
Other Anaemias	32	4
Exophthalmic Goitre	3	1
Other Diseases of the Thyroid Gland	17	..
Diseases of the Parathyroid Gland	1	..
Diseases of the Spleen	1	..
Leukæmia and Lymphadenoma	12	4
Alcoholism (acute and chronic)	11	1
Chronic poisoning by mineral substances	39	4
Chronic poisoning by organic substances	1	..
Other General Diseases	5	1
III. <i>Diseases of the Nervous System, Eye and Ear—</i>		
Meningitis	17	14
Locomotor Ataxia	21	2
Other Diseases of the Spinal Cord	6	1
Cerebral Hæmorrhage	13	10
Cerebral Thrombosis	10	5
Hemiplegia	30	6
Other forms of paralysis	11	..
General Paralysis of the Insane	8	2
Other forms of insanity	12	..
Epilepsy	25	1
Convulsions (non-puerperal)	18	1
Chorea	2	..
Hysteria	14	..
Neuritis	34	2
Neurasthenia	7	..
Other diseases of the Nervous System—		
Cerebral tumour	2	..
Paralysis Agitans	5	2
Diseases of the Eye and Annexa	408	..
Diseases of the Ear or Mastoid Sinus	37	2

	Cases.	Deaths.
IV. <i>Diseases of the Circulatory System</i> —		
Pericarditis	2	1
Endocarditis	5	3
Myocarditis	135	57
Other Diseases of the Heart—		
(1) Aortic Valve Disease	20	3
(2) Mitral Valve Disease	10	5
(3) Other Heart Diseases	13	5
Diseases of the Arteries—		
Aneurysm	28	6
Embolism and Thrombosis (not cerebral)	4	2
Diseases of the Veins	53	..
Diseases of the Lymphatic System	34	..
Other Diseases of the Circulatory System	37	4
V. <i>Diseases of the Respiratory System</i> —		
Diseases of the accessory nasal sinuses	140	..
Diseases of the Larynx—Laryngitis	8	1
Bronchitis—		
(a) Acute Bronchitis	2	..
(b) Chronic Bronchitis	350	5
Broncho-Pneumonia	143	64
Lobar Pneumonia	94	20
Pneumonia (not defined)	77	24
Pleurisy—		
Empyema	45	6
Congestion of the Lungs	7	1
Abscess of the Lung	5	2
Asthma	18	3
Other diseases of the Respiratory System	6	..
VI. <i>Diseases of the Digestive System</i> —		
Diseases of the buccal cavity and annexa	82	..
Tonsillitis and Adenoid vegetations	180	..
Affections of the Oesophagus	2	..
Ulcer of Stomach	36	6
Ulcer of Duodenum	12	2
Diarrhoea and Enteritis	170	20
Other diseases of the Stomach	152	7
Ankylostomiasis	62	..
Diseases due to other intestinal parasites	38	4
Appendicitis	517	9
Appendix abscess	11	1
Hernia	196	4
Intestinal obstruction	26	16
Other diseases of the Intestines—		
Intestinal stasis	83	..
Other diseases	35	..
Acute yellow atrophy of the liver	3	3
Cirrhosis of liver (not returned as alcoholic)	53	20
Biliary Calculi	5	1
Other diseases of the liver	63	12
Diseases of the Pancreas	9	4
Peritonitis without stated cause	15	5
VII. <i>Non-Venereal Diseases of Genito-Urinary System and Annexa</i> —		
Acute Nephritis	31	10
Chronic Nephritis	73	16
Other diseases of the Kidneys and Annexa	79	11
Calculi of the Urinary System	15	1
Cystitis	52	8
Other diseases of the Bladder	42	..
Diseases of the Urethra—		
(a) Stricture of the Urethra	84	11
(b) Other diseases of the Urethra	76	3
Diseases of the Prostate	23	..
Non-venereal diseases of the male genital organs	81	..
Cysts and other tumours of ovary, not returned as malignant	26	1
Salpingitis and pelvic abscess—Salpingitis	264	7
Tumours of the Uterus, not returned as malignant	179	7
Non-puerperal uterine hæmorrhage	13	..
Other diseases of the Uterus	192	..
Non-puerperal diseases of the breast	16	..
VIII. <i>The Puerperal State</i> —		
Accidents of Pregnancy—		
(a) Abortions	9	..
(b) Ectopic	23	2
(c) Other accidents of pregnancy	23	3

					Cases.	Deaths.
	Pregnancy .. .. .	..	..	..	12	..
	Other accidents of childbirth .. .. .	..	..	..	4	..
	Puerperal Sepsis .. .. .	..	..	..	3	1
IX.	<i>Diseases of Skin and Cellular Tissues—</i>					
	Gangrene .. .. .	..	..	..	13	4
	Carbuncle and Boil .. .. .	..	..	..	37	2
	Abcess—					
	Whitlow .. .. .	..	..	..	91	..
	Cellulitis .. .. .	..	..	..	134	1
	Tinea .. .. .	..	..	..	2	..
	Scabies .. .. .	..	..	..	7	..
	Other diseases of the skin and its annexa—					
	Uleers .. .. .	..	..	..	80	..
	Eczema .. .. .	..	..	..	28	..
	Keloid .. .. .	..	..	..	3	..
	Other diseases .. .. .	..	..	..	13	..
X.	<i>Diseases of the Bones and Organs of Locomotion—</i>					
	Acute and Chronic Osteomyelitis and Periostitis .. .. .	..	..	..	66	1
	Diseases of the Joints .. .. .	..	..	..	70	1
	Amputations .. .. .	..	..	..	52	..
	Other diseases of the organs of locomotion .. .. .	..	..	..	67	..
XI.	<i>Congenital Malformation</i> .. .. .	..	..	..	1	..
XII.	<i>Diseases of Early Infancy</i> .. .. .	..	..	..	92	28
XIII.	<i>Senile Dementia</i> .. .. .	..	..	..	26	3
XIV.	<i>Food Poisoning</i> .. .. .	..	..	..	16	7
	Other accidental poisonings .. .. .	..	..	..	1	..
	Burns .. .. .	..	..	..	94	9
	Injury by firearms .. .. .	..	..	..	17	..
	Injury by piercing or cutting instruments .. .. .	..	..	..	28	..
	Injury by other forms .. .. .	..	..	..	438	21
	Fractures .. .. .	..	..	..	279	13
	Dislocations .. .. .	..	..	..	15	..
	Sprains .. .. .	..	..	..	32	..
	Starvation .. .. .	..	..	..	13	..
	Ill-defined causes .. .. .	..	..	..	131	5
					9,181	748

TABLE VI.

1. Operations upon the Female Genital Organs—	Cases.		Cases.
Pan Hysterectomy	8	Removal of Cervical Polyp	7
Total Hysterectomy	2	Amputation of Cervix	4
Sub-total Hysterectomy	132	Trachelorrhaphy	1
Myomectomy—Abdominal	12	Removal of section from Cervix	3
Myomectomy—Vaginal	2	Ectopic Gestation	23
Salpingectomy	102	Cauterizing Cervix	18
Salpingo-oophorectomy	60	Treatment of Cervix with Aeriflavine	1
Draining Pyosalpinx	13	Insertion of Laminaria Tent	1
Draining abscess in Douglas' Pouch	3	Fixation of Uterus	4
Oophorectomy	32	Shortening of Round Ligament	3
Suspension of Ovaries	2	Packing of Uterus	1
Ovariectomy	4	Dilating Vagina	4
Partial Oophorectomy	3	Excision of Bartholin Cyst	8
Removal of Par-ovarian cyst	2	Plastic Operation on Vulva	1
Draining of Ovarian Cyst	7	Cauterization of Vulva	1
Removal of Tubo-ovarian Cyst	2	Removal of Elephantiasis Vulva	2
Removal of Ovarian Cyst	20	Pelvic Examinations	7
Excision of Broad Ligament Cyst	11		
Removal of Ovarian Tumour	1	2. Operations on Hernia—	
Incision of Tubo-ovarian abscess	3	Inguinal	158
Draining of Pelvic abscess	2	Umbilical	9
Operation of Hydrosalpinx	2	Ventral	3
Uterine Suspension	14	Strangulated hernia	5
Curettagc	96		
Dilation of Cervix	82	3. Operations for Appendicitis—	
Perineorrhaphy	4	Appendicectomy	536
Colporrhaphy	4	Appendix Abscess	9
Repair of Vesico-vaginal Fistula	2		

	Cases.		Cases.
4. <i>Operations of Stomach and Intestines—</i>		Resection of Rib	1
Perforation of Gastric Ulcer ..	13	Amputations of Breast ..	8
Laparotomy for Intestinal Obstruction	5	Draining Lung Abscess ..	1
Gastro-enterostomy	4	Excision of Fibroma of Breast ..	2
Gastrectomy	1	Opening Breast Abscess ..	9
Colostomy	2	11. <i>Operations on the Ear—</i>	
Laparotomy for Peritonitis ..	15	Radical Cure of Mastoid ..	18
Laparotomy for Tuberculous Peritonitis	1	Draining of Mastoid ..	1
Opening Peritoneal Abscess ..	2	Suturing Lobe of Ear ..	1
Draining Abdominal Abscess ..	1	Operating for Infected Cartilage	1
Exploratory Laparotomy ..	1	Operation for Congenital Deformity of Ear	1
Operation for Intussusception ..	3	Removal of Aural Polyp ..	3
Laparotomy for volvulus of intestines	2	Removal of Foreign Body in Ear	1
Plication of mesentery ..	2	12. <i>Operations on the Nose, Mouth, etc.—</i>	
Laparotomy for internal Hæmorrhage	4	Excision of Tumour of Lip ..	2
Excision of Omentum ..	2	Excision of Epulis ..	3
Freeing Bowel Adhesions ..	3	Excision of Epithelioma ..	1
Operation for Acute Pancreatitis	2	Removal of Adenoids ..	728
Draining Abdominal Wall Cyst	2	Removal of Tonsils ..	821
Suturing Abdominal Ulcer ..	1	Dissection of Tonsils ..	169
5. <i>Operations on the Kidney and Bladder—</i>		Removal of Nasal Polyp ..	58
Nephrectomy	2	Submucous Resection ..	2
Supra-pubic Cystotomy ..	31	Removal of Nasal Cyst ..	3
Cystoscopy	25	Dilating Nasal Passage ..	1
Draining of Peri-nephric abscess	1	Excision of Papilloma ..	4
Nephrolithotomy	1	Operation for Tumour of Jaw ..	1
Uretero-colic Transplantation ..	2	Extraction of Teeth ..	21
Draining Empyema of Bladder	1	Opening Dental Cysts ..	4
Supra-pubic Prostatectomy ..	3	Shortening Uvula ..	1
6. <i>Operations on the Penis and Urethra—</i>		Operation for Parotid Fistula ..	1
Urethrotomy	2	Operation for Tongue-tie ..	4
Excision of Urethral Fistula ..	2	Oesophagoscopy	3
Opening of Prei-urethral Abscess	3	Bronchoscopy	3
Dilation of Urethral Stricture ..	5	Laryngoscopy	1
Cauterization of Urethral Carbuncle	4	Excision of Ranula ..	2
Circumcisions	203	Excision of Parotid Cyst ..	3
Partial Amputation ..	3	13. Operation for Cleft Palate ..	3
Separation of Adherent Prepuce	1	Tracheotomy	8
7. <i>Operations on the Testicle and Scrotum—</i>		14. Suturing Tendons	9
Orchidectomy	6	Tenotomy	6
Tapping Hydrocele ..	3	15. <i>Operations on Antrum and Frontal Sinus—</i>	
Radical Cure of Hydrocele ..	14	Antrostomy	48
Undescended Testicle ..	5	Curetting Sinus	2
Operation on Sinus of Scrotum ..	1	Cauterizing Sinus	1
8. <i>Operations on Rectum and Anus—</i>		Draining Sinus	31
Hæmorrhoidectomy	35	16. <i>Ophthalmic Operations—</i>	
Injection of Hæmorrhoids ..	2	Extraction of Cataract ..	71
Dilating Rectal Stricture ..	41	Needling Cataract	114
Opening Rectal Abscess ..	5	Evacuation	1
Opening Rectal Sinus ..	1	Excision of growth of eye ..	4
Operation for Prolapsed Rectum	1	Scleral Trephine	13
Sigmoidoscopy	7	Iridectomy	39
Proctoscopy	2	Enucleation of Eyeball ..	43
Excision of Anal Fistula ..	16	Excision Pterygium ..	136
Excision of Fissure in Ano ..	4	Syringing Lachrymal Duct ..	18
9. <i>Amputations—</i>		Excision of Lachrymal Sac ..	6
Legs	16	Dilation of Lachrymal Duct ..	5
Arm	3	Operation for Ptosis ..	3
Hand	1	Excision of Prolapsed Iris ..	6
Fingers	18	Separation of Synechiae ..	1
Toes	14	Excision of Conjunctival Cyst ..	3
10. <i>Operations on Thorax—</i>		Repair Socket	1
Thoracoplasty	20	Cauterizing Growth ..	1
Thoracotomy	2	Excision of Chalazion ..	7
		Plastic Entropion	1
		Tenotomy	4
		Scraping Cornea	1
		Opening Lachrymal Abscess ..	1
		Operation for Muscle Advance-ment	6

	Cases.		Cases.
Resuturing Eyelids	2	Excision of Thyroid Cyst ..	10
Plastic Operation on Eyelid ..	8	Partial Thyroidectomy ..	2
Excision of Granuloma	2	Incision of Thyroid Abscess ..	1
Excision of Papilloma of Lid ..	1		
Exploration of Orbit	1	22. <i>Operations on Liver and Gall</i>	
Extraction of Dislocated Lens ..	1	<i>Bladder—</i>	
Operation for Orbital Cellulitis ..	1	Cholecystectomy	5
		Cholecystostomy	6
17. <i>Operations on Infections of Bones—</i>		23. <i>Excision of Glands—</i>	
Osteomyelitis	29	Cervical	2
Sequestrotomy	7	Inguinal	22
Osteotomy	5	Excision of Tubercular Gland ..	4
Excision of Osteoma	4	Submaxillary	2
Resection of Rib for Empyema ..	5	24. Excision of Keloid of Axilla ..	1
Operation for Osteitis of Leg ..	2	Draining Cellulitis	1
Sequestrectomy	1	Examinations	92
Sub-periosteal resection of Bone	2	Excision of Toe Nail	83
Draining of Knee Joint	1	Excision of Finger Nail	11
Arthrodesis of left shoulder for		Excision of Lipoma	13
Tuberculosis	1	Excision of Bursae	6
Spinal Graft	1	Excision of Warts	9
18. <i>Dislocations—</i>		Excision of Ganglion	21
Reduction of Dislocations	12	Removal of Supernumerary Digit	6
Open Reduction	15	Excision of Carbuncle	7
Plastering	16	Ligature of Arteries	3
Reduction for Dislocated Pelvic		Breaking down adhesions ..	1
Bone	1	Scraping Ulcer	18
Manipulation of Club Foot ..	2	Suturing Wounds	34
Operation for Talipes	2	Haemorrhages	2
19. Trephining of Skull	3	Sections for Dropsy	14
Decompression Operation for		Opening Septic Finger	10
Tumour of Brain	1	Incision of Abscess	137
20. <i>Fractures of Bones—</i>		Removal of Foreign Body ..	87
Plating Femur	2	Lumbar Puncture	5
Wiring	8	Excision of Carcinoma	1
Insertion of Pins	12	Removal of Sutures	6
Manipulation	13	Cauterizations	53
Incision of Hematoma	2	Injection of Varicose Veins ..	9
Operation for Elevation of		Removal of Prepatellar Bursae ..	3
Depressed Fracture	1	Injection of Prepatellar Bursae ..	2
Arthrotomy	2	Auto Transfusion	1
Removal of head of radius ..	1	Aspiration	5
Attempted Reduction of Fracture	3	Operation for Popliteal Aneurysm	1
Removal of Plate	2	Excision of Epithelima	2
Removal of Os calcis Pins ..	1	Ligation of Cubital Vein	1
Bone Graft	1	Separation of Adherent Tendons	1
Reduction of Fracture	14	Secondary Suturing	4
21. <i>Operations on Thyroid Gland—</i>		Excision of Sebaceous Cyst ..	18
Thyroidectomy	2		
Removal of Thyroid Adenoma ..	2		
			5,398

TABLE VII.

N. A. B.	..	..	..	..	10,027
Bismuth ..	..	..	..	..	10,863
G. C. Vaccines	..	..	..	..	172
Tartar Emetic	..	..	..	..	68
Individuals treated with N. A. B.	..	..	..	..	5,460
Treated for V. D.	..	..	..	..	12,698
Admissions—					
Male ..	..	..	..	..	611
Female—	..	..	..	..	160
Discharges—					
Male ..	..	..	..	..	471
Female	..	..	..	..	98
Dressings and Irrigations—					
Male ..	..	..	..	..	1,547
Female	..	..	..	..	243
Treated for Syphilis—					
Male ..	..	..	..	..	2,359
Female	..	..	..	..	3,175
Treated for Gonorrhœa—					
Male ..	..	..	..	..	1,326
Female	..	..	..	..	299
Treated for Chancre—					
Male ..	..	..	..	..	710
Female	..	..	..	..	Nil
Treated for Soft Chancre—					
Male ..	..	..	..	..	Nil
Female	..	..	..	..	Nil
Total for Syphilis, Gonorrhœa, etc.	..	..	..	..	7,661
New Cases—					
Syphilis ..	..	..	..	..	1,784
Gonorrhœa	..	..	..	..	442
Chancre	..	..	..	..	161
Operations	..	..	..	..	466
Prescriptions dispensed—					
Wards ..	..	..	..	..	861
Out-Patients	..	..	..	..	9,035

TABLE VIII.

Out-Patients with Tickets	..	..	..	27,232
No. of Casualty Patients	..	..	..	98,523
Dressings in Out-Patients' Department	..	..	..	92,971
Clinics—				
Ear, Nose and Throat ..	..	..	..	3,612
Dental ..	..	..	..	7,822
Eye ..	..	..	..	8,258
Orthopædic	..	..	..	4,651
Total No. of Out-Patients	..	..	..	243,069
Minor Operations	..	..	..	7,172
Surgical Operations—	..	..	..	4,544
General Admissions by S.M.O.—				
Applications	..	..	..	4,968
Admissions	..	..	..	2,860
Motor Car Accident Cases	..	..	..	938

Table IX.—Prescriptions Dispensed during 1938.

No. of Patients with O. P. Cards	..	..	..	27,232
No. of Patients without O. P. Cards	..	..	..	80,400
Number of Prescriptions for—				
Patients with O. P. Cards	..	..	..	34,392
Patients without O. P. Cards	..	..	..	80,400
Jubilee Hospital	..	..	..	4,964
Constabulary	..	..	..	1,080
Tuberculosis Hospital	..	..	..	990
Railway	..	..	..	58
Nurses' Home	..	..	..	42
Prisoners	..	..	..	29
Total number of Prescriptions	..	..	..	121,955

A. S. WESTMORLAND,
Senior Medical Officer, Public Hospital.

Table X.—Summary of Work performed at the Dental Clinic attached to the Public Hospital, Kingston.

No. of Patients treated	..	..	..	7,822
No. of Extractions	..	..	..	14,102
No. of Mouth Washes prescribed	..	..	..	139
No. of Minor Operations	..	..	..	5
No. of removals of Necro Process	..	..	..	8
No. of Cleanings	..	..	..	2
No. of Splints	..	..	..	3

S. C. DePASS,
Surgeon Dentist, Public Hospital.

Table XI.—Radiology Department.

Total No. of Patients X-rayed from January to December, 1938	5,181
No. of Gastro-Intestinal Series	426
No. of Gall Bladders—Cholecystography	83
No. Urinary Tract—Urography	107
Chests	835
No. of Obstetrical Examinations	68
Sinuses	334
Cases Treated (X-ray Therapy)	69
Miscellaneous	3,259

C. H. PARKIN,
Radiologist, Public Hospital, Kingston.

(B) Report of the Resident Medical Officer of the Jubilee Lying-in Hospital, for year ended 31st December, 1938.

Admissions (including re-admissions)	..	..	..	3,082
(showing an increase of 562 more than the previous year.)				
Married Patients	..	..	..	765
Single Patients	..	..	..	2,317
Deliveries:				
Live Births	..	..	..	2,515
(a) Full Term	..	..	..	2,430
(b) Premature	..	..	..	85
Deaths and Stillbirths	..	..	..	52
Macerated	..	..	..	56
Miscarriages and Abortions	..	..	..	180
Operative deliveries including Inductions	..	..	..	27
There were 30 Breech, including footling presentations.				
Twins	..	..	..	45
Triplets	..	..	..	1
Deaths—				
Maternal	..	..	..	27
From Post Partum Hæmorrhage	..	..	3	
From Puerperal Sepsis	..	..	1	
From Obstetrical Shock	..	..	1	
From Eclampsia	..	..	9	
From Peritonitis	..	..	3	
From Myocarditis	..	..	2	
From Lobar Pneumonia	..	..	3	
From Cerebral Hæmorrhage	..	..	1	
From Placenta Prævia	..	..	1	
From Cerebral Malaria	..	..	1	
From Toxæmia	..	..	1	
From Cerebral Tumour	..	..	1	
Infantile	..	..	..	77
From Prematurity	..	..	60	
From Cerebral Hæmorrhage	..	..	3	
From Convulsions	..	..	4	
From Congenital Syphilis	..	..	3	
From Hæmophilia	..	..	3	
From Asphyxia	..	..	2	
From Bronchial Pneumonia	..	..	1	
From Congenital Atelectasis	..	..	1	

Maternal Abnormalities and Complications.

A. <i>True Complications of Pregnancy—</i>				
Albuminuria	..	..	..	41
Eclampsia	..	..	..	34
Ante and Post Partum Hæmorrhage	..	..	..	8
Placenta Prævia	..	..	..	3
Adherent and Retained Placenta	..	..	..	6
Hydramnios	..	..	..	2
Pyelitis	..	..	..	7
Hyperemesis Gravidarum	..	..	..	21
Subinvolution	..	..	..	24
Puerperal Sepsis	..	..	..	4
Ectopic Gestations	..	..	..	2
Contracted Pelvis	..	..	..	3
Chronic Nephritis	..	..	..	17
Pre-Eclamptic Toxæmia	..	..	..	1
Sapræmia	..	..	..	18
B. <i>Other Abnormalities and Complications—</i>				
Malaria	..	..	..	10
Vesico vaginal Fistula	..	..	..	3
Salpingitis and Pyosalpinx	..	..	..	5
Cardiac Disease	..	..	..	10
Helminthiasis	..	..	..	11
Pulmonary Tuberculosis	..	..	..	16
Cystic Ovaries	..	..	..	3
Uterine Fibroids	..	..	..	7
Ischio-Rectal Abscess	..	..	..	1
Breast Abscess	..	..	..	13
Myxoedema	..	..	..	1
Pneumonia	..	..	..	4
Cerebral Tumour	..	..	..	1
Mucous Colitis	..	..	..	1
Embryomata	..	..	..	1
Syphylitic Condylomata	..	..	..	1
<i>Fœtal Abnormalities and Complications—</i>				
Umbilical Herniæ	..	..	..	16
Hare-lip and Cleft Palate	..	..	..	1
Talipes	..	..	..	2
Opthalmia Neonatorum	..	..	..	20
Extra Digits	..	..	..	25
Hydrocephalus	..	..	..	1
Umbilical Hæmorrhage	..	..	..	3
Anencephalic Head	..	..	..	2
Cephalhæmatoma	..	..	..	2
<i>Operations (Major)—</i>				
Curettages	..	..	..	66
Cæsarean Sections	..	..	..	2
For Ectopic Gestations	..	..	..	2
Exploratory Laparotomy	..	..	..	1
Inductions	..	..	..	19
Perineorrhaphy	..	..	..	1
Repair Vesico Vaginal Fistula	..	..	..	1
Retained Placenta Prævia	..	..	..	2
Appendectomy	..	..	..	1
Salpingectomy and Appendectomy	..	..	..	1
Hysterectomy	..	..	..	1
Excision of Ovarian Cyst and Appendectomy	..	..	..	1
Operations (Minor)	..	..	..	156

Ante-Natal Clinic.—There were 5,870 visits to the Ante-Natal Clinic during year ending 1938, of these 68 were albuminurics, etc. The visits to this Clinic in 1938, showed an increase of 2,097 as compared with 1937 and 3,611 in 1936.

Appointment—Miss D. M. Harrison was appointed Matron in July, 1938, succeeding Miss I. McGregor, who acted for one year following the death of Miss McNeil-Smith. Miss Harrison comes from Cyprus where she was Matron of a District Hospital for 4½ years, until December, 1937.

J. M. STOCKHAUSEN,
Resident Medical Officer, Victoria Jubilee
Lying-in Hospital.

(C) *Report and Returns of the Senior Medical Officer, Mental Hospital.*

During 1938, the most important event was the passing of "A Law to substitute the name 'Mental Hospital' for the name 'Lunatic Asylum' and to amend the Laws relating to the said Institution."

The most important amendment permitted the sending out of patients on a "Trial Period." This is a valuable provision and enables patients to be sent out earlier and also permits the testing of doubtful cases. The other new provision is for the admission of patients on a voluntary basis, thus avoiding the necessity for certification and allowing non-certifiable cases to come in for treatment.

Only one patient was admitted during 1938, on a voluntary basis and he departed much improved. He was not certifiable but his admission undoubtedly prevented him from becoming bad enough to make certification necessary: Thus, this Section of the Law has already justified itself as a step toward the prevention of insanity.

ADMISSIONS AND DISCHARGES.

On the 31st December, 1937, there were 2,148 patients on the Register,—males 1,056, females 1,092. During the year 541 patients—males 273, females 268 were admitted: 213 patients—males 107, females 106 were discharged: 331 patients—males 145, females 186 died. Thus on 31st December, 1938, there were on the Register, 2,145 patients—males 1,077, females 1,068, a decrease of 3. Despite this fall in numbers the daily average number of patients was 2,151, an increase of 62 over 1937. The highest number on any day was 2,173.

The number of cases discharged "Recovered" is 26% of the number admitted: the corresponding figure for cases discharged "Relieved" is 10.9%.

DEATHS.

The number of deaths was 331—males 145, females 186. One of the male deaths took place in the Public General Hospital where he had gone for surgical treatment. The Mortality rate per 1,000 patients under treatment was 125; (the number under treatment is arrived at by adding together the number remaining at the end of the year, the number of discharges and the number of deaths.) The number of deaths per 100 admissions was 61.1.

The Mortality rates given above are for comparison with similar statistics issued by other countries.

CAUSES OF INSANITY.

It is not possible to give any indication as to the reason for the development of insanity in those admitted. This information can only be got after enquiry by trained observers of the home circumstances, family history, previous health of the patient, etc., machinery for which does not exist.

The vast majority of those admitted suffer from physical disorder especially Hookworm and Syphilis. It is noticeable that readmissions, whose previous psychosis cleared up *pari passu* with effective treatment for Hookworm, were found again to be infected with Hookworm.

OCCUPATION OF PATIENTS.

A fair number of patients do some work, the majority very little, but a number work well. In the Male Division patients assist the Artisans—Carpenters, Tailor, Tinsmith, Blacksmith, Plumber, Mason. Others work in the vegetable gardens, assist in the wards, and also as shepherds, messengers, and one does excellent work in the clerk's office. The female patients work in the wards, in the laundry and needleroom.

The Returns from the vegetable gardens having proved disappointing, I sought the help of the authorities at Hope Gardens. The gardens were inspected and reported upon. The diminishing yields have been due to the overgrowth of trees, to the gradual deepening of irrigation channels, insufficiency of water and failure to use any system of crop rotation. These faults have been due mainly to the want of skilled supervision.

During the year the fowls were disposed of for the reasons that (1) Cost of food far exceeded the value of eggs laid, (2) They were permitted to mix with other breeds (belonging to residents) with the result that the original strain of Rhode Island Red had disappeared.

The large number of mango trees in the grounds are of inferior quality. The question of budding with good varieties is being considered.

During the year the sheep prospered and the close of the year showed promise of a record number of lambs in 1939. Despite the large amount of grassland available, it is necessary to buy grass for the farm animals in times of drought.

AMUSEMENTS.

Long standing plans for the rebuilding of the Entertainment Hall came to fruition at the end of the year. Demolition was due to commence just before Christmas, but, as a number of entertainments has been planned, this was postponed until January.

The Combined Medical's Cricket Team played matches regularly, and they are to be congratulated on their success in winning the Junior Cup.

The Bowling Green has not been in use as the surface had deteriorated too much.

A cricket Match, on novel handicap lines, between the Male and Female Staffs proved most exciting and entertaining, and ended in a win for the ladies by 4 runs.

NEW WORKS.

Despite continued overcrowding no addition was made to the ward accommodation.

The old Store, attached to the Office building was demolished, and a much roomier building erected instead. The Male Kitchen was enlarged and the ventilation improved.

The female Dining Hall was entirely re-roofed, the shingles giving way to zinc sheeting.

The bathing pool had some repairs done to it and a wire fence was erected round the outside, as it was continually being used by unauthorised persons who approached from the sea.

STAFF.

At the beginning of the year, Dr. U. N. Murray was Acting Medical Superintendent, and continued in this position until the arrival of Dr. D. I. Cameron who took up the position of Senior Medical Officer from 1st July, 1938.

Dr. J. J. Cameron was on sick leave until the 4th March, 1938, when his retirement became effective.

Dr. A. St. G. Stephenson continued to act as Medical Officer until the 13th June, 1938, when he was transferred and his vacancy filled by the appointment of Dr. Frank Stephenson.

Miss H. J. Tyler, Matron, obtained four weeks leave of absence prior to her retirement on the 27th September, 1938.

Mr. V. A. Isaacs, Second Class Clerk, was promoted First Class Clerk and transferred to the Public Works Department. His place was taken by Mr. S. E. Fyffe from the Treasury. Miss S. M. Aris, Assistant, was transferred to the Crown Solicitor's Office and her place was taken by Miss L. M. Locke, who was later transferred to the Island Medical Office.

The following members of the Subordinate Staff left the Service during the year:—

Chief Charge Attendant, C. Tummings—Retired—1.7.38.

Chief Charge Attendant, C. Morrison—Retired—1.7.38

Chief Charge Attendant, R. Josephs—Retired—31.12.38

Chief Charge Nurse A. Spencer—Retired—13.5.38

Charge Attendant E. Chambers—Resigned—28.5.38

Attendant, J. Wright—Died—6.8.38

Attendant, G. Tomlinson—Resigned—15.7.38

Nurse M. Scafe—Resigned—17.7.38.

Nurse V. Weekes—Resigned—22.4.38.

Nurse A. Wakefield—Resigned—8.12.38

In addition 4 Nurses and 1 Attendant were struck off the strength for various reasons. As from the 1st July, 1938, the subordinate Staff were placed on a new salary scale, representing substantially an all round increase of 25%.

Report by Dr. E. W. Flahiff on the Tuberculosis Studies continued at the Mental Hospital during Year, 1938.

The routine intracutaneous tuberculin tests were continued during the year on newly admitted patients. 460 new admissions received the tuberculin test. Of these, 409 were positive to tuberculin. 51 individuals did not react to tuberculin. Of this group of non-reactors to tuberculin, 19 received intracutaneous vaccinations with heat killed tubercle bacilli. These vaccinations are intended to produce immunity against tuberculosis. 18 non-reactors to tuberculin acted as controls for this vaccinated group. The remaining 14 non-reactors were not suitable for either group. Repeated tuberculin tests, every three months, have been done on all old and new vaccinated and control cases, to observe any change in their tuberculin reaction.

The attempt has been continued to take chest X-rays of all new admissions who were not too excited. During the year 466 new admissions were X-rayed among whom were found 5 cases of manifest pulmonary tuberculosis, 8 cases of latent apical tuberculosis, one case of caseous lymph nodes, and 37 calcified lesions. This insured early isolation of the infected individuals.

A further group of old "vaccinated" and control cases were also X-rayed at intervals of approximately four months, and as many as possible of the old tuberculin positive admissions were re-X-rayed during the year. A total of 1,547 X-rays was taken during the year.

Autopsies have been done on as many cases as possible who have died in the institution. 255 pairs of lungs were obtained during the year for X-ray study and careful post mortem examination.

The work has progressed most favourable during this year and it has been possible to tuberculin test and X-ray a good percentage of the new admissions.

JAMAICA MENTAL HOSPITAL.

Population Return 31st December, 1938.

	Males.	Females.	Total.	Males.	Females.	Total.
Remaining, 31. 12. 1937	..	..	..	1,056	1,092	2,148
Admitted during 1938 ..	273	268	541	..	..	..
Total under care, 1938	..	..	..	1,329	1,360	2,689
Discharged—Recovered	73	68	141	..	..	..
Discharged—Relieved	33	36	69	..	..	..
Discharged—Not improved	1	1	2	..	..	..
Discharged—Not insane	..	1	1	..	..	..
Patients died ..	107	106	213	..	..	..
	*145	186	331	..	..	..
Total Discharged and died	..	..	..	252	292	544
Remaining 31st Dec., 1938	..	..	..	1,077	1,068	2,145

*One died in P. G. H.

On Books at begin ning of Year.			Admissions during the Year.			Departures during the Year.			On Books at end of Year.		
Total.	In Hospital.	Absent.	Total.	1st Admissions	Re-Admissions.	Total.	By Discharge.	By Death.	Total.	In Hospital.	Absent.
2,148	2,148	..	541	425	149	544	213	331 A	2,145	2,142	3 B

A—one at P.G.H.
B—includes 2 at P.G.H. and 1 absent on Trial.

Admissions, Discharges and Deaths, by Parishes.

	Kingston.		St. Andrew.		St. Thomas.		Portland.		St. Mary.		St. Ann.		Trelawny.		St. James.		Hanover.		Westmoreland.		St. Elizabeth.		Clarendon.		St. Catherine.		Manchester.		Totals.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Admissions	36	51	24	30	21	16	12	16	25	21	18	21	11	9	19	9	5	6	11	11	18	22	20	19	26	24	27	13	273	268
Discharges	18	23	13	5	5	5	5	10	9	7	8	12	4	3	4	3	4	5	9	4	8	7	11	8	6	4	8	6	107	106
Deaths	27	39	8	22	3	8	12	12	13	12	6	3	5	5	6	11	3	6	11	9	12	16	15	13	13	15	13	13	145	186

Duration of Treatment of those who died.

	Under one month.	2 to 3 months.	4 to 6 months.	7 to 9 months.	10 to 12 months.	13 to 18 months.	19 to 24 months.	2 to 5 years.	6 to 10 years.	11 to 15 years.	16 to 20 years.	Over 20 years.
Males	17	23	8	11	10	7	7	25	18	7	5	7
Females	17	21	18	21	6	14	3	35	22	14	6	9
Totals	34	44	26	32	16	21	10	60	40	21	11	16
		78										
			104		48		31					
				152								

Duration of Treatment of those discharged.

	Under 3 months.	4 to 6 months.	7 to 9 months.	10 to 12 months.	13 to 15 months.	16 to 18 months.	19 to 24 months.	Over 2 years.	Total.
Males	25	30	20	13	7	2	2	8	107
Females	24	27	12	13	12	6	2	10	106
Total	49	57	32	26	19	8	4	18	213

Age at Death.

	0-10 years.	11-15 years.	16 to 20.	21 to 25.	26 to 30.	31 to 35.	36 to 40.	41 to 45.	46 to 50.	51 to 55.	56 to 60.	61 to 65.	66 to 70.	71 to 75.	Over 75 years.	Total.
Males	..	2	5	14	11	21	21	20	12	9	8	9	4	5	4	145
Females	..	1	7	12	18	34	28	20	18	10	15	7	8	6	2	186
Totals	..	3	12	26	29	55	49	40	30	19	23	16	12	11	6	331

Table 1A.—Showing the number of previous attacks among those admitted during the Calendar Year, 1938, distinguishing those attacks that have been treated to recovery and discharged.

Number of previous Attacks.	Having had previous Attacks.					
	All Attacks.			Attacks followed by Discharge or Recovery.		
	Males.	Females.	Total.	Males.	Females.	Total.
Have had 1 previous attack ..	48	46	94	8	10	18
Have had 2 previous attacks ..	15	21	36	2	9	11
Have had 3 previous attacks ..	1	4	5	1	..	1
Have had 4 previous attacks ..	..	3	3	..	1	1
Have had more than 5 attacks ..	9	5	14	2	1	3
Unknown	6	1	7	1	..	1
	79	80	159	14	21	35

Table 2.—Showing the Causes of Deaths among Female Patients during the Calendar Year, 1938, with Ages at Death.

Causes.	Under 20 Years.	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70	Total
Inanition	1	1	..	..	..	..	2
Status Epilepticus	1	..	..	..	..	1
Chronic Brain Disease	1	1	..	..	..	..	2
Cerebral Hæmorrhage	1	1	..	..	2
General Paralysis of the Insane	6	..	1	2	..	9
Ulcerative Entero Colitis	2	4	6	1	2	..	15
Amœbic Dysentery	4	7	..	1	..	12
Senile Decay	6	6
Lobar Pneumonia	1	3	1	1	3	1	..	10
Syphilis	1	2	3	..	1	..	7
Pulmonary Tuberculosis	2	7	19	5	3	1	..	37
Pellagra	1	4	5	5	2	..	17
Ankylostomiasis	3	3	5	5	1	..	17
Arterio Sclerosis	1	1	..	2
Miliary Tuberculosis	1	3	1	1	..	..	..	6
Lung Abscess	1	4	..	..	1	..	6
Acute Encephalitis (non-specific)	4	..	1	..	..	..	5
Carcinoma of Stomach	1	..	..	..	1
Cerebral Abscess
Cardio Renal Disease	1	1	..	6	1	2	..	11
Syncope
Carcinoma of Colon	1	..	..	..	..	1
Pyæmia	1	..	..	..	..	1
Carcinoma of Uterus	1	..	1
Carcinoma of Breast	1	..	..	1
Chronic Myocarditis	2	1	..	1	4	..	8
Abdominal Tuberculosis	1	..	..	..	1
Blackwater Fever	1	..	..	..	..	1
Typhoid Fever	2	1	..	..	..	3
Asphyxia	1	..	..	..	1
	5	30	57	45	23	20	6	186

Table 2.—Showing the Causes of Deaths among Male Patients during the Calendar Year, 1938, with the Ages at Death.

Causes.	Under 20 Years.	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70	Total.
Chronic Brain Disease	1	..	..	..	..	1
Cerebral Hæmorrhage	2	..	1	3
Status Epilepticus	1	1	..	..	..	..	2
General Paralysis of Insane	4	15	11	4	2	..	36
Acute Entero Colitis (Non-specific)	1	1	4	2	1	..	..	9
Chronic Entero Colitis (Non-specific)	1	..	4	..	..	..	5
Amœbic Dysentery	1	..	2	1	..	..	4
Senile Decay	3	4	7
Lobar Pneumonia	1	1	1	1	4
Syphilis	1	2	1	2	1	7
Pulmonary Tuberculosis	2	7	7	3	5	1	..	25
Pellagra	2	..	2	2	6
Ankylostomiasis	2	2	1	2	1	..	8
Arterio Sclerosis	1	..	1	1	3
Miliary Tuberculosis	1	3	1	1	..	..	..	6
Lung Abscess	1	..	..	..	1
Acute Encephalitis (Non- specific)	2	2	1	2	..	..	..	7
Internal Hæmorrhage	1	..	..	..	1
Carcinoma of Stomach	1	..	..	1
Cerebral Abscess	1	1	..	..	..	..	2
Cardio-renal Disease	1	..	..	..	..	1
Bone Tuberculosis	1	..	1
Bronchial Carcinoma	1	..	..	..	..	1
Chronic Myocarditis	1	..	1
Syncope	1	..	..	..	..	..	1
Carcinoma of Colon	1	1
	6	24	36	34	18	15	11	144

Table 3.—Showing the duration of the Disorder on Admission in the Admissions, Discharges and Deaths during the Calendar Year ended 31st December, 1938.

Class.	Admission.			Discharges.						Deaths.		
				Recovered.			Relieved or otherwise.					
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
<i>First Class</i> —First attack and within 3 months on admission	145	158	303	18	24	42	6	3	9	29	37	66
<i>Second Class</i> —First attack above 3 and within 12 months on admission	19	14	33	1	..	1	1	..	1	3	6	9
<i>Third Class</i> —Not First attack and within 12 months on admission	64	77	141	9	8	17	4	11	15	5	6	11
<i>Fourth Class</i> —First attack or not but of more than 12 months on admission	21	17	38	..	..	..	1	1	2	1	1	2
<i>Fifth Class</i> —Congenital	22	2	24	..	..	..	..	..	..	1	..	1
Unknown	2	..	2	..	..	..	..	..	..	..	..	..
Total	273	268	541	28	32	60	12	15	27	39	50	89

FINANCIAL STATEMENT.

Cost of Maintenance for the year, 1938.

	£	s.	d.
Salaries	5,622	0	6
Wages	20,921	8	4
Religious Services	60	0	0
Allowance for Shortage	0	17	0
Dietary	15,784	15	11
Uniforms for Nurses and Servants	638	15	10
Furniture and Utensils	423	6	7
Clothing and Bedding	1,291	9	6
Drugs and Medical Appliances	254	13	5
Funeral Expenses	167	3	8
Travelling Expenses of Discharged Lunatics	72	16	3
Farm, Ground and Repairs	506	2	6
Telephones	93	13	9
Washing and Sanitary Arrangements	387	7	4
Fuel, Lighting and Power	910	12	5
Miscellaneous	305	8	2
	£47,440	11	2
Less Reimbursements:—			
Contributing Patients	£3,119	8	10
Miscellaneous Revenue	161	4	8
	£44,159	17	8

Return showing Cost per occupied bed for year ended December 31, 1938.

	Average No. of Beds.	Cost of Staff.	Other Charges.	Total.	Cost per occupied bed per annum.					
					Staff.			Other Charges.		
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		
Mental Hospital.	2,151	26,603 8 10	20,837 2 4	47,440 11 2	12 7 4		9 13 9			

D. I. CAMERON,
Senior Medical Officer,
Mental Hospital.

(D) Return of Diseases and Deaths in Public General Hospitals (outside Kingston) for 1938.

Diseases.	Cases Treated.	Deaths.	Out-patients.
Anthrax	1	1	..
Chicken Pox	3	..	37
Diphtheria	13	5	4
Epidemic Diarrhoea	1	..	15
Dysentery—			
(a) Amoebic	21	..	4
(b) Bacillary	2	..	..
(c) Unclassified	9	..	42
Erysipelas	5	1	10
Enteric Fevers	350	96	29
Gonococcal Infections	856	3	3,027
Influenza	72	3	652
Leprosy .. .. .	..	..	10
Malaria—			
Tertian	1,830	51	7,792
Quartan	323	2	365
Aestivo-Autumn	115	24	2
Cerebral (cachexia)	49	9	35
Blackwater	18	5	3
Undefined (cerebral)	4	4	..

Diseases.				Cases Treated.	Deaths.	Out-patients.
Fever Undefined	..	..	..	38	..	623
Measles	..	..	..	31	..	302
Poliomyelitis	..	..	..	2	..	1
Encephalitis Lethargica	..	..	..	..	..	.. 1
Cerebro-spinal Meningitis	..	..	..	1	1	..
Mumps	..	..	..	10	..	54
Scarlet Fever	..	..	..	1	..	1
Soft Chancre	..	..	..	95	..	148
Syphilis—						
(a) Primary	..	..	..	396	10	1,729
(b) Secondary	..	..	..	70	..	325
(c) Tertiary	..	..	..	424	20	1,396
(d) Congenital	..	..	..	56	8	170
(e) Period not indicated (unclassified)				215	3	1,101
Dengue	..	..	..	1	..	..
Septicæmia	..	..	..	53	19	..
Tuberculosis—						
Pulmonary	..	..	..	297	27	315
Other Forms	..	..	..	78	8	43
Tetanus	..	..	..	46	17	7
Mycosis	..	..	..	..	..	1
Whooping Cough	..	..	..	..	..	45
Yaws	..	..	..	44	..	4,047
Alcoholism	..	..	..	5	..	..
Anaemias	..	..	..	77	5	601
Diabetes	..	..	..	116	18	68
Pellagra	..	..	..	8	2	8
Rheumatism—						
Acute	..	..	..	103	..	411
Chronic	..	..	..	64	..	1,975
Rickets	..	..	..	3	..	11
Tumours—						
Malignant	..	..	..	240	48	107
Non Malignant	..	..	..	110	3	295
Diseases of the Ductless Glands	..	..	..	17	3	37
Do. Nervous System	..	..	..	445	68	1,224
Do. Eye	..	..	..	388	..	1,985
Do. Ear	..	..	..	67	1	573
Do. Circulatory System	..	..	..	586	119	1,783
Do. Lymphatic System	..	..	..	214	..	638
Do. Respiratory System	..	..	..	1,228	196	2,519
Do. Digestive System	..	..	..	3,552	195	14,792
Do. Spleen	..	..	..	13	..	60
Do. Breast	..	..	..	121	..	308
The Puerperal State	..	..	..	1,051	77	722
Diseases of the Genito-Urinary System						
(Non-Veneral)	..	..	..	3,221	154	6,142
Do. Skin and Cellular Tissues	..	..	..	2,130	17	13,080
Do. Bones and Organs of Locomotion	..	..	..	374	5	1,669
Malformations	..	..	..	19	..	16
Diseases of Infancy	..	..	..	41	12	141
Diseases of Old Age	..	..	..	26	1	37
Chronic Poisoning	..	..	..	11	..	3
Diseases produced by External Causes	..	..	..	3,771	88	12,320
Ill-defined Diseases	..	..	..	159	11	288
Other General Diseases	..	..	..	9	2	3
No Diseases	..	..	..	19	..	95
Diseases which have not caused 10 deaths	..	..	..	129	2	1,336
				23,847	1,344	85,587

(E) Return of Surgical Operations, Public General Hospitals (excluding Kingston), 1938.

	Cases.
I. Operations upon Female Genital Organs—	
Salpingectomy	294
Draining Pyosalpinx	10
Colporrhaphy	2
Post Colporrhaphy!	1
Oophorectomy	35
Ovariectomy	20

	Cases.
Ovarian Cysts	57
Salpingo-oophorectomy	187
Broad Ligament Cysts	10
Myomectomy	42
Sub-total Hysterectomy	190
Total Hysterectomy	18
Vaginal Hysterectomy	5
Cæsarian Section	3
Uterine Suspension	43
Curettage	480
Biopsy of Cervix	4
Dilation of Cervix	61
Extra Uterine Gestation	43
Amputation of Cervix	6
Pelvic Repair	1
Repair of Vagina	11
Repair of Vesico Vaginal Fistula	5
Excision of Hymen	4
Repair of Urethro-Vaginal Fistula	2
Excision of labial growths	7
Incision of Bartholin Cyst	1
Hæmatocolpos	1
Incision of Bartholin Abscess	3
Induction of abortion	5
Pernicorrhaphy	26
Draining Pelvic Abscess	3
Cervical polypus	5
II. Parturition—	
Instrumental Delivery	56
Adherent Placenta	2
Cæsarean Section	15
Craniotomy	9
Induction of Labour	22
Laparotomy for Abdominal Pregnancy at Term	1
Bipolar Podalic Version	2
Removal of Dead Foetus	1
Removal of Retained Products	21
Removal of Retained Placenta	3
III. Operations on Hernia—	
Radical cure—Inguinal	238
Femoral	2
Strangulated hernia	41
Obstructed hernia	6
Umbilical hernia	12
Ventral hernia	13
IV. Operations for Appendicitis—	
Appendicectomy	1,247
Appendix Abscess	31
V. Operations upon the Stomach and Intestines—	
Perforation of gastric ulcer	4
Perforation of duodenal ulcer	4
Colostomy	4
Intestinal obstruction	23
Laparotomy	104
Gastrectomy	4
Gastro-enterostomy	28
Gastrectomy Partial	2
Intussusception	9
Paracentesis (Abdomen)	12
Laparotomy for tubercular peritonitis	7
Lateral anastomosis	5
Presacral Neurectomy	3
VI. Operations on the Bladder and Kidney—	
Lithotomy	1
Inflammation of Uretero	1
Supra pubic cystotomy	29
Retention of Urine	1
Cystoscopy	33
Nephrotomy	1
Transplanting Ureters into Colon	2
Urethroscopy	4
Prostatectomy	13
External Urethrotomy	7

	Cases.
VII. Operations upon the Urethra and Penis	1
Dilating Urethral Stricture	417
Circumcisions	557
Incision of Penis	5
Amputation of Penis	11
Incision Abscess Perenial	4
Reduction of para phymosis	33
VIII. Operations on the Scrotum and Testicle—	
Radical cure for hydrocele (1 Encysted Hydrocele Cord)	94
Tapping Hydrocele	1
Orchidectomy	14
Incision Abscess Scrotum	2
Drainage of Hæmatocele	1
IX. Operations on the Anus and Rectum—	
Anal Fistulæ	13
Hæmorrhoidectomy	59
Dilating rectal stricture	35
Talma Morrison	1
X. Amputations	192
XI. Operations upon the Ear—	
Radical cure for mastoid	5
Conservative operation for mastoid	1
XII. Operations on the Nose and Throat—	
Removal of Adenoids	247
Quinsy	4
Excision of Larynx	1
Tonsillectomy	1,061
Tonsillectomy, dissection of	6
Nasal Polyp	42
Turbinates	4
Turbinectomy	4
XIII. Tracheotomy	6
XIV. Operations on the Thorax—	
Amputation of breast for malignancy	26
Incision of Galactoceles breast	1
Incision Abscess breast	6
Adenoma of breast	3
Thoracentesis	5
Thoracoplasty	7
Pericardotomy	1
XV. Operations on Tendons—	
Suturing tendons	83
Tenotomy	5
XVI. Operations on Antrum and Frontal Sinus	9
XVII. Ophthalmic Operations—	
Extraction of cataract	5
Cauterizing Corneal Ulcer	5
Needling Cataract	10
Incision Conjunctivitis	1
Enucleation of Eyeball	51
Suturing Corneal Flap	1
Iridectomy	5
Granulated Eyelids	4
Meibomian cysts	27
Tumour of Eye	1
Pterygium	28
XVIII. Operations on Affections of Bones—	
Scraping Periostitis	1
Osteomyelitis	40
Arthrotomy	3
Sequestrotomy	61
XIX. Dislocations	81
XX. Fractures of Bones —	
Flating Femur	23
Reductions of Fractures	66
Wiring Fractures	9
Setting Fractures	77
Setting and Plastering	47
Compound Comminuted Fracture	1
Radical Excision of Mandible	1
XXI. Excision of Glands—	
Axillary	5
Inguinal	248

	Cases.
XXII. Operations upon the Thyroid Gland	10
XXIII. Operations upon the Liver and Gall Bladder—	
Splenectomy	1
Biliary Calculus	1
Draining Bladder	2
Cholecystectomy	16
XXIV. Incision of Abscess	1,505
Suturing Wounds	874
Removal of foreign bodies (bullets, needles, etc.) ..	189
Examinations	162
Scraping Ulcers	153
Dental extractions	1,706
Excision of ganglion	9
Excision of toe nail	110
Excision of lipoma	31
Excision of keloid	12
Excision of epulis	9
Breaking down adhesions	45
Plastic operations	28
Excision of tubercular glands	9
Excision of Bursæ	8
Excision of Carbuncle	25
Amputation of supernumerary digits	25
Sebaceous Cysts	50
Operation for Hare Lip	7
Plastic operation for contractures of arm	4
Sigmoidoscopy	16
Trephining for cerebral compression	12
Cauterisation of warts, sinuses, etc	39
Phreneectomy	19
XXV. Miscellaneous	428
XXVI. Other minor operations	491
Aspirating Tuberculous Hip	1
Aspiration of Joints	11
Cauterization Cervix	9
Induction of Pneumothorax	169
Venesection	1
Injection Frankenhauser's Ganglion	6
Trendelenburghs operaton	2
Ligation Blood Vessels	2
Steinach's Ligature for Prostate	2
XXVII. Operations on Sympathetic Nervous System	18
Total	13,593

(F) *Report of the Medical Attendant of the Lepers' Home.*

At the beginning of the year there were 85 men and 80 women in the Institution. At the end of the year there were 83 men and 77 women—a total decrease of 5.

There were 23 admissions during the year—15 males and 8 females. Of the lot 3 were non-lepers and were subsequently discharged. 2 were re-admissions having suffered relapses since their discharge from the Home, and 3 were discharged after a brief period in the Home as burnt out non-infectious cases of Anæsthetic Leprosy.

There were 21 deaths during the year—15 males and 6 females, due to the ravages of the disease and its sequelæ. The death rate per thousand based on the daily average number of inmates in the Home was 129.442. The daily average number of inmates was 162.25 as against 164.27 for 1937.

The general health of the inmates was fairly satisfactory.

Treatment was regularly carried out particularly among patients whom because of comparatively recent infection it was thought would be most benefitted by pushing the chaulmoogra preparations.

Treatment by intramuscular injection of approved remedies was irregularly pursued because of the disinclination of the majority of the inmates to submit to this mode of treatment for a prolonged period. There has been no marked advantage in the treatment by injection over and above the oral administration of remedies.

The Diet Scale was adhered to with minor modifications and some increase in the fat content of the diet, thus improving the palatability of the food. This was much appreciated by the inmates and complaints were in consequence not nearly so frequent.

The Staff consists of:—

1. Superintendent.
2. Matron.
3. Female Orderlies.
4. One Nurse.
5. Two Cooks.
6. One Messenger.

Religious ministrations and regular services received the attention of the Anglican Chaplain and his assistants, the Roman Catholic Body and representatives of the Seventh-day Adventists.

Miss Marvin continues her wonderful work among the Lepers, visiting from time to time giving evidence of her whole hearted interest, engaging in cheerful talks and bestowing personal gifts that are always gratefully and thankfully received.

Mr. Norman Crayford, Toe H Lay Worker, continues his social service work among the inmates.

Recreation: Cricket, Tennis, Table Tennis, Croquet, Dominoes, Draughts and Card Games are chiefly engaged in.

The Radiogram still continues to function and is a source of entertainment, besides providing the news of the day and educative programmes.

A Band consisting of seven pieces of musical instruments is being maintained.

Agricultural work on the farm was pursued as usual. 36 plots were maintained in cultivation. 20 acres of adjacent lands were acquired as a free gift from the United Fruit Company for the extension of the farm. Just as soon as the necessary fencing is complete, additional lots will be made available for cultivation. The products of the farm are taken into the Stores at the ruling contract prices. The value of products so consumed last year amounted to £81 7s. 5d.

The washing of clothes, cleaning of compounds and drains are undertaken by the inmates themselves for which they receive small money payments with which they procure odds and ends of comparative luxuries for themselves.

Currently, an attempt is being made to have the inmates themselves paint, whitewash, and do minor repairs on buildings, work hitherto undertaken by the Public Works Department. Providing as it does gainful occupation, and besides, definitely brightening up an otherwise depressing institution, it is, I must say, a step in the right direction.

The buildings still present a rather unattractive appearance, they are old, badly in need of repairs and painting, and do not provide adequate floor space for the comfortable housing of the inmates.

I am definitely in favour of the building of separate cottages, especially for the accommodation of cases of long duration. The Ward System on an extended scale could be carried on, with cubicles, for the type of case that comes more intimately under the supervision and treatment.

The discipline of the Home was on the whole fairly well maintained. All things considered, the behaviour of the inmates was throughout the year quite commendable.

H. H. BLAIR,
Medical Attendant, Lepers' Home.

(G) Report of the Schools Medical Officer of the Corporate Area of Kingston and St. Andrew.

The medical inspection of elementary schools in the Corporate Area of Kingston and St. Andrew was completed in April 1938, the time taken to complete the first circuit being three years and eight months. A summary of the work done and impressions gained is here presented to you.

Staff.—This consisted only of one School Medical Officer and 2 nurses, with the limited use of a statistical clerk. Requests for increase in staff have not been granted.

Area under Supervision.—The entire Corporate Area of 191 square miles, only 30 square miles of which is situated on the Liguanea Plain the rest on the foot hills and heights of the Blue Mountain range—Several schools are placed at elevations of 3,000-4,000 feet from 2 to 6 miles from a driving road. These must be reached on foot or horseback.

School Population.—There were 22,500 on the roll of 69 schools with an average attendance of 18,000. Of these, 35 schools with a population of 12,000 children are placed on the Liguanea Plain, the remainder on the mountains.

School Premises.—(a) The buildings vary with the resources of the religious denomination which controls them, some are frail and tottering, others are substantial, many are held in Churches. Of Government schools, 14 in number, one half are housed in concrete buildings.

All the schools, with two or three exceptions are overcrowded. At St. Ann's school, for example, the floor space per child is only 3.4 square feet, at Ebenezer school 6.2 square feet.

(b) Sanitation and Water Supply.—In Kingston, water closets are used, the number for each school is usually adequate. No toilet paper is provided in the majority of schools and this leads to uncleanly habits among certain classes of the population.

In St. Andrew, the pit closet, usually fly-proof, is used. The water supply is not always adequate, even in Kingston. There are still many large schools which provide only 1 or 2 taps for the use of hundreds of children. Hand basins and soap are to be found in less than one half the number of schools, and that after many appeals, personal and otherwise to all Head Teachers. Some of the Government Schools are to be classed among the unhygienic ones.

The divorce of the practical application of hygiene from class-room teaching is to be deplored. The children on being questioned, repeat in parrot fashion the elementary rules of cleanliness, but have no chance of practising them, with the result that all questions of Hygiene and Public Health are regarded by them in more or less the same light, i.e., fit for the class-room only. This effect on the psychology of the child has been over looked in too many cases.

Condition of Children.—(a) Cleanliness (body and clothes) was good in Kingston and satisfactory in St. Andrew. Vermin have been never found on any child.

(b) Nutrition and Diet.—One of the first impressions gained in 1934 was the high percentage of malnourished and undernourished children. The hurricanes and droughts of the previous year probably accentuated the condition. The attention of the department was attracted and a campaign on Malnutrition begun. The Ministers Fraternal of Kingston started an experimental Lunch Kitchen at Jones Pen School. Here there were 900 pupils, many of whom were of the poorest classes living in the slum known as Trench Pen. The Education Department was interested and had a census of lunches taken, which, on account of the sensitiveness of the people on such a point, cannot be regarded as accurate, but gives

no indication of the number of children, who, beginning the day on sweetened water and a few biscuits, have no lunch and wait until 4 p.m. for their first meal. Others are given such sums as one farthing or half-penny for their lunch. Half the number were reported as going home to lunch, which usually means a bowl of maize porridge. The experimental kitchen having proved successful an appeal to the public was made, and with the money collected a substantial Lunch Kitchen built, which supplies 800 lunches per day, at a price of 1½d. per lunch. A certain percentage of lunches is given free.

CLINICAL SIGNS OF MALNUTRITION.

(a) General undernourishment was seen in thin under-developed children.

(b) Mal-nourishment was seen in many who were plump, but living on a diet mostly carbohydrate, showed vitamin deficiency, or carbohydrate imbalance. Such clinical manifestations of avitaminosis as perleche, glossitis, stomatitis, salivation, were found in about 20% of children. A combination of the two conditions is common.

Optic Atrophy.—In addition, in 1934, 8% were afflicted with optic atrophy which led to temporary or permanently defective vision. Vision in many cases fell to 6/60. There are over 60 of these partially blinded children for whom no improvement is possible. It was because of this distressing symptom that such active propaganda against malnutrition was undertaken, and the value of protective or vitamin containing foods stressed, with the result that in 1937 only 1.5% of children showed signs of optic atrophy. It is not too much to say that the interest of the population in the protective foods—fresh milk, eggs and green and yellow vegetables—has been definitely aroused.

Seasonal Incidence of Malnutrition.—It has been observed by the School Medical Officer that the nutritional state of the children fluctuates greatly with season. From February to April or May, the signs of avitaminosis are more pronounced especially in the country schools. The teachers and parents notice the cracked lips and white mouth corners and attribute it to the cold dry winds which prevail then.

In the autumn session, after a good mango season, with crops coming in, and with the avocado pear in full season, the members of the malnourished decrease.

(c) Diseases:

The defects found are—

- (1) Eye-diseases.
- (2) Dental caries.
- (3) Diseases of nose and throat, particularly of the tonsils.
- (4) Skin diseases.
- (5) Infestation with intestinal parasites, particularly Hookworm.
- (6) Malaria.
- (7) Yaws.
- (8) Congenital Syphilis.
- (9) Organic diseases.
- (10) Deformities.

(1) Eye-diseases. External eye-diseases are made unduly prominent by the high incidence of a form of follicular conjunctivitis found in over one-third the number of children. The number treated in 1937 for this complaint was 999. Many children give no complaints; others do. Research is needed in this disease to show (1) whether it is infectious or not. (2) whether treatment is necessary in all cases. These cases have to attend from half to one year at clinics before they are cured. The loss of school time and the congestion of clinics, which sometimes number 200 patients, are important points for consideration.

The other eye-diseases are caused mainly by debility or malnutrition e.g., phlyctenular ulcers, blepharitis, retrobulbar neuritis (Optic Atrophy).

(2) Dental caries—The standard of oral hygiene was low, but is now improving. A third dentist has recently been appointed.

(3) The high percentage of diseased tonsils is largely due to the poor oral hygiene.

(4) Skin diseases—Attention is drawn to a form of ringworm (*Tinea flava* or *versicolor*) which is becoming prevalent, and which is usually called "Liver spots."

(5) Intestinal parasites.—The degree of infestation is unknown. Hookworm is seldom found in Kingston. A small survey taken in 1936 indicates that the western half of rural St. Andrew which had been surveyed and treated by the Hookworm Commission 10 years ago has been re-infected and needs further treatment. The eastern section situated on the main ridges of the Blue Mountains, is still unaffected.

(6) The incidence of Malaria among children is unknown, but cannot be high. Very rarely has a spleen been felt during routine examinations.

(7) Yaws.—As a result of intensive work done by the Yaws Commission, the Public Health Department and local Medical Officers, the incidence of this disease appears to be declining. Infected children are legally excluded from school, hence cases are only occasionally found there.

(8) Congenital Syphilis.—A survey made in collaboration with the Rockefeller Foundation in 1936 showed that about 3% of school children on the Liguanea Plains had positive blood reactions. (It was noted that about one-third of these showed no clinical signs.) This would indicate that there are 300 to 400 children on the plains needing anti-syphilitic treatment. In many cases the parents, especially when married, refuse treatment for their children, but at present of 142 cases detected at schools over one-half have had some treatment. In addition, the brothers and sisters (and sometimes parents) of these children must be tested and treated. A children's clinic would relieve the great congestion now prevailing at the Public Hospital, Kingston. Parents object to their children attending Government Clinics for Venereal Diseases.

(9) Organic diseases.—Less than 1.0% of children have organic heart disease. An occasional case of nephritis has been found, and one or two asthmatics.

(10) Deformities are rare.

Tuberculosis has never been discovered in routine examinations, though children of school age are not infrequently notified.

Work of the Department consists of:—

- (a) Detailed examination of school children.
- (b) The holding of three clinics for treatment weekly.
- (c) Propaganda work.—Parents' Meetings, public addresses (occasionally) and Health Week activities.
- (d) Follow-up Work—
 - (1) By the Schools Medical Officer interim visiting of schools interviewing parents—occasional district visiting:
 - (2) By Nurses—school visits, the following up of a limited number of more serious cases, e.g., congenital syphilitics. The time of the two nurses being almost fully taken up with inspections and clinical work there is little left for such work.
- (e) Office Work.—keeping of files and registers for each school.

The amount of good done is unknown, even with regard to our own clinic cases, few of whom attend for registered discharge. Cases sent to Hospitals or Medical Officers are usually lost, with the School Dentist only is there definite contact.

From 1,500 to 1,700 new cases attend for treatment annually at the Eye Clinic. There is no staff to follow-up even one quarter of this number.

Work in Rural Schools:—

When it was discovered that the School Nurse could visit no more than four cases in their homes per day it was decided to abandon district visiting in the country. The Department is thus almost completely out of touch with rural parents, the only link being the school teacher.

Attempts on the part of the School Nurse to visit rural school regularly also failed. It was discovered that many of the more distant schools had been visited once a year, or even less frequently. These schools have been examined once in $3\frac{1}{2}$ years, so that it cannot be claimed that much is done for rural schools. On account of cost of transport, few defective children can attend the school clinics. An attempt is made to meet the difficulty by leaving dressings and cod liver oil at schools under the care of the head teacher. This has not given satisfactory results, except in trivial cases.

Statistics.—Few are available since there is no clerical staff. A statistical clerk gives limited help. The following tables show the work done. The percentages of defects are not comparable, since different schools are examined each year.

TABLE I.

	Total.	1934.	1935.	1936.	1937.	1938.
No. of children examined ..	17,963	2,475	5,095	4,921	3,475	1,999
Defectives % ..	76%	74%	72.8%	76.1%	76.6%	81%
Referred to Hospital or Dispensary (estimate) ..	2,000 est.	150	600	590	364	137
Treated at Clinic ..	6,363	1,056	1,721	1,726	1,527	333
Special Dental attention ..	112	33	37	11	19	12
Discharged as cured ..	1,524	226	507	343	313	135

TABLE II.

	Total percentage.	1934. (Aug. to Dec.)	1935.	1936.	1937.	1938. (Jan. to April).
Eye Diseases ..	36.8	33.4	34.2	39.4	42.7	34.2
Dental Caries ..	33.1	34.2	35.0	30.0	39.0	37.3
Diseased Tonsils and Adenoids ..	20.2	19.1	14.9	22.4	19.7	24.9
Skin Diseases ..	7.2	7.0	6.6	7.9	10.0	4.6
Malnutrition ..	43.2	44.0	37.5	38.0	40.4	56.2
Clinic Attendance ..	39,556	2,220	9,547	12,445	12,347	3,004
Clinic New Cases ..	6,246	1,056	1,500 (est.)	1,726	1,527	437
Population of 69 registered elementary schools ..	..	..	..	..	22,500	..
Average attendance per annum ..	..	..	..	..	18,000	..

Statistics on height and weight for age, and on the date of eruption of permanent teeth would be useful, since the children of Kingston seem to be taller but less heavy than schedules calculated in Great Britain or the United States of America, and to obtain their second teeth at a much earlier age.

DAHLIA WHITBOURNE,
Schools Medical Officer.

Addenda:

(1) The percentage of defectives—76%—includes minor ailments and follicular conjunctivitis. It would be interesting to find out from records the percentage of children who were definitely in ill-health at the time of examination.

(2) Much credit is due to the school teachers for their active co-operation, without which the circuit of the schools could not have been made in the time recorded.

VII.—SCIENTIFIC.

Report of the Bacteriological and Pathological Laboratory, 1938.

Administration.—During the year there was an addition to the Staff of one Junior Laboratory Assistant, but the need for more technical assistants to cope with the volume of work is still an urgent one.

Dr. K. Leigh Evans, the Government Bacteriologist and Pathologist, was granted combined leave of absence and study leave in September, and Dr. L. E. Arnold appointed to act in his place.

Dr. W. J. Branday was seconded from the Central Health Services to act as Assistant Government Bacteriologist and Pathologist *vice* Dr. Arnold.

Dr. Evans is taking further post-graduate studies in specialized Laboratory procedures at the University of Michigan, U.S.A.

Mr. W. G. Fitz-Ritson and Mr. H. C. Berry were both ill during the year and on leave for 8 weeks and 4 weeks, respectively.

Mr. H. V. Garriques, Junior Laboratory Assistant, spent ten weeks at the University of Michigan during the summer taking a Laboratory course in Pathology and Clinical Microscopy.

Mr. G. S. Smith was transferred to the V.D. Clinic. Mr. G. R. Grant succeeded him. Mr. T. U. Glasspole was transferred to the Surveyor General's Office, and his position filled by Mr. P. D. Almirall. Mr. J. J. Williams was promoted, under the new Estimates, as Junior Laboratory Assistant, and Mr. H. J. Williamson appointed *vice* Mr. Williams.

Visitors.—The Laboratory was honoured by special visits from the following:—

His Excellency the Governor and Lady Richards, accompanied by the Hon. C. C. Woolley, C.M.G., Colonial Secretary, and Mrs. Woolley, and the Hon. Major T. J. Hallinan, C.B.E., Director of Medical Services and Mrs. Hallinan.

Colonel L. W. Harrison, M.D., etc., D.S.O., Chief Advisor on Venereal Diseases to the Colonial Office.

Doctors W. A. Sawyer and Thomas Parran of the Rockefeller Foundation and United States Army Medical Services.

Dr. Mary Blacklock of His Majesty's Royal Commission.

GENERAL.

The total number of examinations made on specimens received by the Laboratory during 1938, amounted to 70,810. This figure is approximately 1% less than last year's high mark in routine work, but was sufficient to necessitate the majority of the Staff working after regulation hours daily. Further, it does not include the examination and classification of 14,314 mosquitoes and larvæ, nor any of the chemical, biological, pathological and other procedures connected with research work conducted during the year.

With the increased staffing and equipment of the V.D. Clinics they were able to conduct their own examinations of smears and urines, two items which accounted for 23.3% of the total Laboratory analyses done in 1937, as compared with 12.2% of the total for 1938; but this decrease was practically compensated for by increases in other items, mainly Throat Swabs, blood films (differential counts, etc.), Enteric and Syphilis Serology, Morbid Histology and examinations of fæces.

Descriptive and Tabular details hereunder

Equipment.—Additions of equipment were an Automatic Pipetting Machine, three microscopes and metal animal cages.

Malaria.—There were 5,224 blood smears examined for Malaria during the year, an increase of 6% above the 1937 total (4,909) with a positive finding of 19% as compared to 13.6% in the previous year and 39.5% in 1936. Of the positive slides 92% were Subtertian, 7.9% Benign Tertian and 0.1% Quartan. A small number showed a mixed infection.

Syphilis Serology.—Except for the first three months of the year, the Laboratory did all the serological examinations for the V.D. Clinics. The Kahn Precipitation Test only was used throughout the year. A total of 32,006 tests was carried out with a positivity of 38.6%, approximately the same as last year (39%) and an increase of approximately 5% in the number of blood specimens examined. Apparatus has been ordered for instituting the Hinton Test in conjunction with the Kahn Test as soon as additional staff is available.

Enteric Diseases—(Bacteriological)—A total of 3,072 blood specimens was submitted for agglutination tests, the great majority being for the typhoid fevers. This is 18% above last year's figure, but there was a very appreciable fall in the number of positive cases during 1938—25.5% as compared with 17%. The number of doubtful cases remained approximately the same, and their percentages—18 and 15 for 1937 and 1938, respectively.

Stool Examinations.—Although there were no outbreaks or special surveys in typhoid, the dysenteries or helminth infestation, stool examinations showed a 25% increase over 1937 to a total of 6,352. There was, however, a large decrease—from 63.9% to 40%—in the number of positive cases. Of these, 20% were Hookworm and approximately 5% each Amœbæ and Ascaris. There were no cases of Bacillary Dysentery, but a small increase in the amœbic type.

Diphtheria.—Throat swabs submitted for examination during 1938 numbered 643, a large increase over 1937 (265). This was due chiefly to an increase in the incidence of Diphtheria of which there were 28 positive swabs in 1937 (10%) and 127 in 1938 (20%). The majority of cases occurred during the "winter" and "Fall" months and were clinically not very grave, but virulence tests are being carried out by the Laboratory.

Approximately 31% of the swabs showed Streptococcal infection only, the great majority being non-hæmolytic.

Gonococci.—Examinations for gonococci fell from 8,560 in 1937 to 2,126 this year. Of these approximately 37% were positive.

Tuberculosis.—Tuberculosis remained at the same level approximately as in 1937, both in examinations and positives—being 1,867 with 21% positive.

Miscellaneous.—Greater use is being made of the Laboratory each year in morbid histology and medico-legal examinations. The former increased over 1937 from 276 to 484, and the latter from 325 to 545. Similarly, during 1938, all hospitals and private practitioners took a greater advantage of the services and facilities available by making increased demands upon the Laboratory for biochemical, microscopical and pathological examinations in all their phases, as well as animal inoculations.

The need of a branch Laboratory for the western end of the Island in order to extend with greater expediency the services of the Health Laboratory, remains an urgent one. Of even greater importance is the provision of facilities in the Central Laboratory for the chemical analysis of foods in the interests of public health requirements.

Typhoid Vaccine prepared amounted to 45,840 ccs.

Telegraphic Reports of all agglutinations for enteric diseases were sent to the Doctors who submitted the specimens, and the positive cases reported to the Medical Officers of Health as well. The sending of this information by telegram to the Medical Officers of Health was started in the latter part of the year. A total of 888 telegrams was sent.

Research.—Researches were conducted during the year into the problem of Ackee (*Blighia Sapida*) Poisoning to which our yearly outbreaks of vomiting sickness, of such high mortality, are attributed. This work was done by Drs. K. Leigh Evans and L. E. Arnold, and the results of their preliminary investigations were published in the Transactions of the Royal Society of Tropical Medicine and Hygiene Vol. XXXII, No. 3 pp. 355-362 which was issued 26th November, 1938, and a reprint of which is attached. Further experimental studies are being carried out by the authors.

ORIGIN OF SPECIMENS.

Table One.

	1934.	1935.	1936.	1937.	1938.
Kingston Public Hospital	19,259	22,634	20,064	19,073	22,977
Mental Hospital ..	967	1,530	1,642	2,358	4,132
Other Institutions ..	1,826	5,133	19,792	30,825	19,758
Country Medical Districts ..	1,783	3,871	7,527	10,312	12,104
Health Officers ..	2,709	3,440	4,241	2,824	4,945
Private Practitioners ..	835	2,958	4,684	6,309	6,894
Totals ..	27,379	39,566	57,950	71,701	70,810

DISTRIBUTION OF SPECIMENS

Table II

	1934.	1935.	1936.	1937.	1938.
Autogenous Vaccines ..	47	52	35	32	34
Autopsies ..	148	141	118	139	171
Blood Examinations:—					
Counts ..	350	415	738	919	1,155
Differential on Malaria					
Slides ..	..	..	..	3,636	4,712
Sedimentation Rate ..	..	..	..	..	22
Cultures ..	25	17	39	23	56
Parasites (Malaria					
Commission) ..	615	1,508	1,200	582	400
Parasites ..	1,635	2,970	5,662	4,327	4,824
Sugars ..	606	846	862	834	908
Ureas ..	88	115	182	220	194
Examination of Fæces:—					
Helminths ..	893	1,638	2,709	3,528	4,262
Amœbæ ..	669	831	1,016	1,124	1,872
B. Dysenteriae ..	200	363	312	319	71
Miscellaneous ..	40	51	184	108	147
Examinations for Gonococci	202	435	5,333	8,560	2,126
Examinations for B. Lepra		(Unclassified Exams).	180	335	320
Examinations for B.					
Tuberculosis ..	464	957	1,341	1,919	1,867
Gastric Analyses ..	38	20	39	80	48
Medico-legal Examinations	202	241	409	325	545
Milk Examinations ..	28	46	76	9	8

	1934.	1935.	1936.	1937.	1938.
Morbid Histology ..	127	142	227	276	484
Persons Vaccinated ..	119	106	108	73	48
Serology of Syphilis ..	8,842	15,366	23,621	30,518	32,006
Serology of Cerebro-Spinal Fluid ..	(Small nos. "Unclassified Examinations")				925
Serology of Enteric Diseases ..	2,526	4,869	4,972	2,596	3,072
Throat Swabs ..	122	50	135	265	643
Typhoid Vaccines prepared ..	1,146	1,125	1,907	1,800	2,292
Unclassified Examinations ..	86	459	186	130	221
Urinalyses ..	5,994	5,169	5,415	8,185	6,558
Van den Bergh Reaction ..	(Small nos. Unclassified Examinations).				88
Water Examinations ..	742	780	944	773	731
Totals ..	27,379	39,566	57,950	71,701	70,810

TABLE IIa.—Results of Examinations.

Examination.	Kingston Public Hospital.	Mental Hospital.	Other Institu- tions.	Country Medical Districts.	Health Officers.	Private Practi- tioners.	Total.
Autogenous Vaccines	34	..	..	..	..	..	34
Typhoid Vaccine ..	..	..	..	..	2,292	..	2,292
Blood Examinations—							
Counts ..	915	4	102	48	23	63	1,155
Differential on							
Malaria Slides ..	1,414	693	1,057	929	198	421	4,712
Sedimentation Rate ..	21	1	..	..	..	..	22
Cultures ..	48	1	3	2	..	2	56
Malaria Parasites+	223	33	54	421	198	49	978
Malaria Parasites -	1,414	693	311	929	478	421	4,246
Sugars ..	823	..	13	22	3	47	908
Ureas ..	175	..	1	12	..	6	194
Examination of Fæces—							
Ascaris +	65	60	19	24	53	16	237
Hookworm +	229	425	214	185	132	71	1,256
Trichocephalus +	215	245	59	104	56	47	726
Helminths -	815	378	158	318	139	235	2,043
Amœbæ +	170	85	11	19	2	29	316
Amœbæ -	780	458	27	148	9	134	1,556
B. Dysenteriae +	..	..	..	..	..	..	..
B. Dysenteriae -	33	8	8	5	2	15	71
Miscellaneous ..	110	2	2	8	7	18	147
Examinations for							
Gonococci—							
Gonococci +	57	5	516	53	1	100	732
Gonococci -	206	4	306	197	17	613	1,343
Gram. Negative							
Extracellular							
Diploci +	15	..	..	3	1	32	51
Examinations for B.							
Lepra—							
B. Lepra +	6	..	148	4	14	2	174
B. Lepra -	32	..	84	11	12	7	146
Examinations for B.							
Tuberculosis—							
B. Tuberculosis +	66	13	4	197	89	29	398
B. Tuberculosis -	525	53	32	550	204	105	1,469
Medico-Legal							
Examinations—							
Blood +	..	..	198	..	..	..	198
Blood -	..	..	101	..	..	..	101
Specific Type Blood	..	..	119	..	..	..	119
Semen +	..	..	21	..	..	..	21
Semen -	..	..	106	..	..	..	106
Milk Examinations ..	..	..	..	..	8	..	8
Morbid Histology ..	240	20	10	175	1	38	484

TABLE IIa.—Results of Examinations, *contd.*

Examination.	Kingston Public Hospital.	Mental Hospital.	Other Institu- tions.	Country Medical Districts.	Health Officers.	Private Practi- tioners.	Total.
Serological							
Examinations—							
Kahn Precipitation:							
+	2,326	281	5,939	2,597	89	1,124	12,356
—	3,574	354	8,756	3,113	116	2,263	18,176
Doubtful	203	25	717	179	5	87	1,216
Contaminated	1	2	59	155	6	35	258
Spinal Fluids	515	240	..	145	..	25	925
Widal Reaction—							
B. Typhosus							
(T1/500, 1/250,							
1/125)	183	13	3	244	36	39	518
B. Typhosus	1,178	20	46	711	25	96	2,076
B. Typhosus							
(Doubtful T 1/50)	162	2	12	236	10	38	460
B. Paratyphosus							
A	..	..	..	..	..	1	1
B. Paratyphosus							
B	..	..	..	..	..	1	1
Br. Abortus	..	..	..	..	..	4	4
Br. Melitensis	..	..	..	..	..	3	3
B. Dysenteriae							
(Flexner) Types							
V, W, X, Y, Z	..	..	..	..	..	7	7
Bact. Dys.							
(Shiga)	..	..	..	..	..	1	1
Bact. Dys.							
(Sonne)	..	..	..	..	..	1	1
Van den Bergh							
Reaction	81	..	..	..	..	7	88
Stomach Contents—							
Test Meal	42	..	..	2	..	4	48
Throat Swabs—							
Diphtheria	65	..	1	13	22	26	127
Diphtheria	150	3	4	31	57	53	298
Streptococci	99	2	4	20	29	45	199
Vincent's Angina	8	..	..	..	..	..	8
Vincent's Angina	10	..	..	..	..	1	11
Unclassified Examina- tions	161	3	13	23	5	16	221
Urine Examinations—							
Chemical Quali- tative	3,640	3	320	123	31	324	4,441
Chemical Quanti- tative	250	..	9	9	..	8	276
Bacteriological	1,478	3	30	138	5	180	1,834
Cultural	1	..	..	1	..	5	7
Water Examinations—							
			<i>Water Board</i>				
Filtered:							
Positive	..	..	..	..	..	..	..
Doubtful	..	..	..	..	..	..	..
Negative	..	..	..	..	1	..	1
Filtered Chlorinated:							
Positive	..	..	1	..	26	..	27
Doubtful	..	..	15	..	68	..	83
Negative	..	..	145	..	349	..	494
Unfiltered							
Positive	..	..	..	..	17	..	17
Doubtful	..	..	..	..	..	..	..
Negative	..	..	..	..	1	..	1
Unfiltered Chlorinated:							
Positive	..	..	..	..	35	..	35
Doubtful	..	..	..	..	46	..	46
Negative	..	..	..	..	27	..	27

Table III.—Autopsies.

				Ordered for Coroner.	Requested by M.O's. of Hospitals.	Total.
<i>General Diseases—</i>						
(1)	Syphilis (congenital, acquired)	..	..	..	3	3
(2)	Enteric Fever	..	..	..	6	6
(3)	Menengitis (Cerebro-spinal, Tuberculosis, etc.)	..	..	..	4	4
(4)	Malaria Fever	..	..	..	6	6
(5)	Purpura Hæmorrhagica	..	..	..	1	1
(6)	Leukæmia (lymphoid, myeloid)	..	..	..	3	3
(7)	Anæmia—severe secondary	..	..	..	1	1
(8)	Ascariasis	..	..	..	3	3
(9)	Marasmus	..	..	..	1	1
(10)	Septicæmia	..	..	..	2	2
(11)	Agranulocytosis	..	..	..	1	1
Total				..	31	31
<i>Injuries—</i>						
(1)	Burns (shock, sepsis, broncho-pneumonia)	..	..	7	..	7
(2)	Long Bones (fractures, hæmorrhage, sepsis, shock, cardiac failure)	..	..	2	..	2
(3)	Spine and Skull (fracture, hæmorrhage, shock, bullet wounds, meningitis)	..	..	18	..	18
(4)	Injury to Liver	} Stab and other penetrating wounds	..	1	..	1
(5)	Injury to Lungs		..	4	..	4
(6)	Injury to Stomach		..	6	..	6
(7)	Laceration of Arteries and Veins (shock, hæmorrhage)	..	..	1	..	1
(8)	Poisoning (Cresol, arsenic, alcohol, phosphorus, vegetable poisons)	..	..	15	..	15
				54	31	85
<i>Diseases of Brain and Meninges—</i>						
(1)	Vascular (hæmorrhages, syphilis, tumours)	..	..	..	9	9
(2)	Landry's Paralysis	..	..	..	1	1
<i>Diseases of Circulatory System—</i>						
(1)	Aneurysms (aorta, heart)	..	..	..	3	3
(2)	Cardiac Failure (coronary disease, endo and myocarditis, syphilis, acute dilation, valvular insufficiencies)	..	..	3	7	10
				57	51	108
<i>Diseases of Respiratory System—</i>						
(1)	Pulmonary Tuberculosis	..	..	..	3	3
(2)	Lobar Pneumonia	..	..	..	5	5
(3)	Broncho-pneumonia	..	..	..	2	2
(4)	Lung Abscess	..	..	1	..	1
				58	61	119
<i>Diseases of Renal Excretory System—</i>						
(1)	Chronic Nephritis (cardio-renal disease)	..	..	..	4	4
(2)	Uræmia	..	..	1	2	3
(3)	Acute Hæmorrhagic Nephritis	..	..	..	4	4
(4)	Congenital Hydronephrosis (bilateral)	..	..	..	1	1
				59	72	131
<i>Diseases of Digestive System—</i>						
(1)	Liver (abscess, toxic and fatty degeneration, cirrhosis, acute yellow atrophy)	..	..	1	10	11
(2)	Gastro Enteritis	..	..	..	2	2
(3)	Pancreatitis (hæmorrhagic, etc.)	..	..	..	2	2
(4)	Gastric and duodenal ulcers (perforated)	..	..	..	4	4
(5)	Peritonitis (tuberculous)	..	..	..	1	1
(6)	Intestinal obstruction (volvulus, hernia, adhesions)	..	..	3	3	6
(7)	Dysentery (bacillary)	..	..	..	1	1
(8)	Mesenteric Thrombosis	..	..	..	2	2
(9)	Appendicitis (ruptured)	..	..	1	2	3
(10)	Cholecystitis	..	..	..	1	1
				64	100	164

Table III., *contd.*

		Ordered for Coroner.	Requested by M.O's. of Hospitals.	Totals.
<i>Diseases of Reproductive System—</i>				
(1) Oopharo Salphingitis (peritonitis)	..	..	1	1
(2) Insanity of Pregnancy	..	..	1	1
		64	102	166
<i>Neoplasms—</i>				
(1) Carcinoma (liver, stomach, lung)	..	..	5	5
		64	107	171

Table IV.—Morbidity Histology.

1. <i>Tumours—</i>				
(a) Benign—				
Adenoma	..	..	..	1
Condyloma	..	..	..	3
Cysts	..	..	..	8
Osteoma	..	..	..	1
Fibroadenoma (inc. Fibroma, Fibromyoma)	..	..	..	29
Papilloma	..	..	..	2
Hodgkins	..	..	..	2
Lymphangioma	..	..	..	3
Hydatid Mole	..	..	..	2
Hæmangio Endothelioma	..	..	..	1
(b) "Borderline" (Locally Malignant)—				
Osteoclastoma	..	..	..	2
"Basal-celled" Carcinoma (Rodent Ulcer)	..	..	..	3
Chorisadenoma destrucous	..	..	..	1
(c) Malignant—				
Carcinoma	..	..	..	52
Epithelioma	..	..	..	12
Sarcoma	..	..	..	6
Embryoma	..	..	..	1
Neuroblastoma	..	..	..	1
2. <i>Inflammatory, etc.—</i>				
Degenerations	..	..	..	35
Inflammatory (not including tuberculosis and syphilis)	..	..	..	130
Tuberculosis	..	..	..	22
Syphilis	..	..	..	12
Malarial Tissues	..	..	..	2
Toxic Poisoning (including ackee) Pancreas, kidney, liver, spleen	121
3. <i>Special Diseases—</i>				
"Bantis"	2
4. <i>Normal Tissues</i>				
	30
Total	484

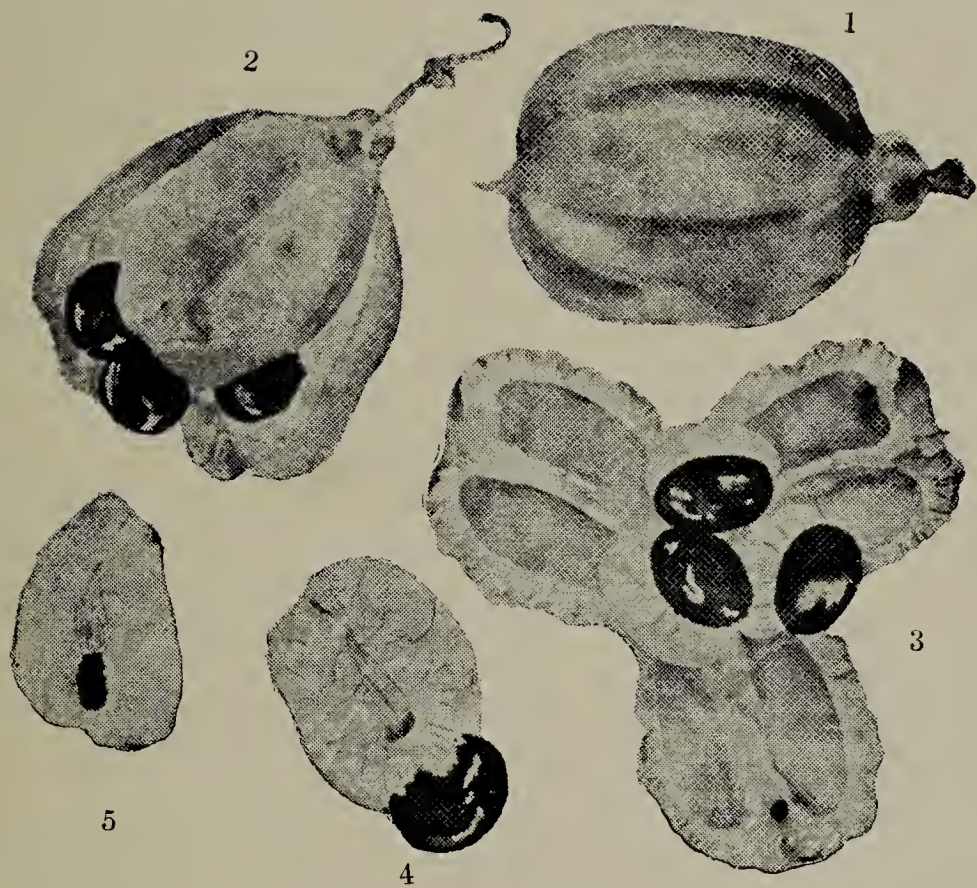
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EXPERIMENTAL STUDIES OF POISONING WITH ACKEE (*Blighia Sapida*).
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I.—EXPERIMENTS WITH KITTENS AND GUINEAPIGS.

The fact that the ackee (*Blighia sapida* Koen) is poisonous in some stages of development is well known to the natives in West Africa and in Jamaica. In West Africa, where the fruit is known as "isin," there is a common saying, "He who eats the isin should know how to remove the poison." The Jamaica peasant ditty, "You tek ackee boil soup, gal you want fe come kill me?" similarly implies knowledge of the method by which the poison is administered, i.e., in the "soup" or "pot-water." The following investigations were carried out in an endeavour to determine the ætiology of the Jamaican disease known as vomiting sickness, for which the ackee has been so often blamed. It is necessary to state that the ackees used in these experiments were collected in the winter months, when vomiting sickness is prevalent, as ackees gathered later in the year did not give the same results.

The accompanying plate shows the ackee in various stages of development. It usually contains three segments, or arilli, which are the edible portions of the fruit. Each arillus carries at the outer or free extremity a seed (Figs. 4 and 5).



ACKEE IN VARIOUS STAGES OF DEVELOPMENT.

- | | |
|--------------------|--------------------------------|
| 1. Unopened fruit. | 4. Arillus with normal seed. |
| 2. Partly opened. | 5. Arillus with embedded seed. |
| 3. Full opened. | |

(2 and 3 show the stages at which the fruit is usually gathered and eaten).

The fleshy arillus is usually prepared for consumption by boiling for 30 to 45 minutes. The preparation of the extracts used in these experiments has been as follows: The arillus is detached from the pod and the seed and placenta carefully removed; the arillus is then cut into small pieces and for each gramme, 2.5 c.c. of distilled water is added; the whole is then boiled vigorously in a covered vessel for 45 minutes; filtration through gauze is followed by filtration through Whatman's filter paper (No. 1); the filtrate, made up so that 1.0 c.c. is equivalent to 1.0 gramme of ackee, is used for the experiments.

TABLE I.—Experiments with kittens.

Number of Kitten.	Weight of Kitten in grammes.	Time.	Amount of Extract in c.c.	Perceived Effects.	Fate.
1	200	1st day	5.00		
		24 hours later	10.0	Drowsy	
		27 hours later			Died
2	330	1st day	12.0		
		24 hours later	10.0	Drowsy and vomiting	
		28 hours later			Died
3	250	1st day	8.0		
		24 hours later	20.0	Drowsy	
		26 hours later			Died
4	1,270	1st day	25.0		
		24 hours later		No vomiting	Died
5	870	1st day	20.0		
		48 hours later		No vomiting	Died
6	490	1st day	15.0		
		48 hours later		No vomiting	Died
7	420	1st day	10.0		
		48 hours later		No vomiting	Died
8	460	1st day	7.5		
		48 hours later		No vomiting	Died
9	570	1st day	5.0		
		48 hours later		No vomiting	Died
10	590	1st day	6.0		
		72 hours later		No vomiting	Died

EXPERIMENTS WITH KITTENS.

The first series of experiments were with kittens, the intention being to repeat the work of SCOTT (1916, 1917 and 1921) in Jamaica, which was confirmed by CONNALL and RALSTON (1918) in Africa with the native isin. The kittens were fed intragastrically. Although not very exact, the minimum lethal dose of unopened ackee (Fig. 1) appears to be approximately 1.0 gramme per 100 gramme of kitten (Table I, above).

Kittens weighing 625, 335 and 327 grammes were fed with 5.0 c.c., 3.0 c.c. and 2.0 c.c. respectively and survived. Kittens weighing 590, 335 and 625 grammes were fed with 6.0 c.c., 4.0 c.c. and 7.0 c.c. respectively. After a period of 4 days, during which they vomited, looked drowsy and were ataxic, they recovered.

Autopsy Findings.

At autopsy the findings were: kidneys, hæmorrhagic, liver, enlarged and degenerative; lungs, collapsed and hæmorrhagic; bladder, very distended with clear fluid; brain, hæmorrhagic. Microscopically there was a tubular nephritis, extensive and diffuse but most intensive in the cortex; the liver showed a diffuse cloudy swelling, especially at the periphery, and some fatty degeneration, the lungs were bronchitic with seropurulent fluid in the alveoli and the bronchioles, the general appearance being that of an aspiration pneumonia.

Procuring kittens in suitable quantities for fuller and more extensive experiments was not possible so guineapigs were employed.

EXPERIMENTS WITH GUINEAPIGS.

It was observed that guineapigs would not eat the uncooked ackee even after they had been starved for 48 hours. JORDAN and BURROWS (1937) reported that guineapigs suffered no ill effects from the ackee extract when taken intragastrically or parenterally. This is contrary to the present observations. It would appear that the dose used (the equivalent of one-fourth of an ackee, i.e., about 4 grammes, the weight of the guineapig not being stated) was too small to produce toxic effects.

After several trials it was found that the minimal lethal dose for a guineapig was 3.5 c.c. (of the extract of the unopened ackee) per 100 grammes of weight, i.e., nearly four times the minimal lethal dose (1.0 c.c.) for a kitten of equivalent weight. Using this dose as the standard, series of experiments were performed with the object of determining the circumstances under which the ackee is poisonous.

A.—*Unopened Ackees* (Fig. 1).(i) *Arilli with Normal Seeds* (Fig. 4).

The extract from these arilli was given subcutaneously to guineapigs weighing 255, 172, 199, 229, 286, 114 and 312 grammes in doses of 9.0, 6.0, 7.0, 8.0, 10.0, 4.0 and 11.0 c.c., respectively. They all died within 18 hours.

(ii) *Arilli with Embedded Seeds* (Fig. 5).

Guineapigs weighing 115, 175, 200 and 145 grammes were injected sub-cutaneously with 4.0, 6.0, 7.0 and 5.0 c.c., respectively of this extract. They all died within 18 hours.

B.—*Partly Opened Ackee* (Fig. 2).(i) *Arilli with Normal Seeds* (Fig. 4).

The extract of these arilli proved non-lethal for guineapigs when injected subcutaneously in doses of 3.5 c.c. per 100 grammes of weight.

(ii) *Arilli with Embedded Seeds* (Fig. 5).

This extract proved lethal for guineapigs weighing 255, 375, 430, 517 and 457 grammes in doses of 9.0, 13.0, 15.0, 18.0 and 16.0 c.c., respectively within 18 hours.

C.—*Fully Opened Ackees* (Fig. 3).(i) *Arilli with Normal Seeds* (Fig. 4).(ii) *Arilli with Embedded Seeds* (Fig. 5).

These extracts were non-lethal when given to guineapigs in the standard doses subcutaneously.

Feeding intragastrically with a catheter gave results parallel to the above. Guineapigs weighing 400, 428, 457, 485, 517 and 572 grammes were fed with quantities varying from 4.5 to 11.0 c.c. (0.9 to 2.45 c.c. per 100 grammes of weight) of extract of unopened ackees, and survived, while the same extract fed in doses of 8.5 to 12.0 c.c. (2.5 to 2.8 c.c. per 100 grammes of weight) was fatal to guineapigs weighing 312, 343, 398 and 428 grammes within 18 hours.

Guineapigs weighing 286 to 312 grammes were fed with 10.0 to 11.0 c.c. (3.5 c.c. per 100 grammes) of extract of arilli with *embedded seeds from partly opened ackees* and survived, but when this same dose was repeated after 24 hours it was fatal. Other guineapigs weighing 312 and 343 grammes were killed, in the first instance, by doses of 11.0 c.c. and 12.0 c.c. of this extract. An extract of arilli with *normal seeds from partly opened ackees* was non-lethal for guineapigs weighing 230, 255, 290 and 344 grammes in doses of 8.0, 9.0, 10.0 and 12.0 c.c. (3.5 c.c. per 100 grammes of weight) respectively, both in the first instance and when repeated after 24 hours.

Extracts of arilli, with *normal or embedded seeds from fully opened ackees* were non-lethal to guinea pigs weighing 200, 229, 255 and 286 grammes in doses of 7.0, 8.0, 9.0 and 10.0 c.c. (3.5 c.c. per 100 grammes of weight) respectively. This dose was repeated on three occasions—4, 6 and 8 days later—without causing any toxic effects.

An extract of arilli from *unopened ackees* was found to be lethal for guinea-pigs when given subcutaneously in sub-lethal doses repeatedly. Guineapigs weighing 375, 143 and 343 grammes were injected with 6.5, 2.5 and 6.0 c.c., respectively, on three successive days and died on the 4th day.

At autopsy the findings in guineapigs were very similar to those in kittens, the auricles were full and dilated and the ventricles contracted, the gall bladder and urinary bladder were full and distended, the latter with clear fluid; the brain was hyperæmic; a serous peritonitis was observed and there was generalized venous congestion. Microscopically there were marked hyperæmia and hæmorrhagic extravasations in all organs with frank hæmorrhages in some, particularly in the lung, kidneys, liver, and adrenals. Early fatty changes were evident in the liver.

II.—SAPONIN, FAT AND PHYTOSTEROL IN ACKEES.

The extracts of ackee used in these experiments were prepared in the same manner as those used in the animal experiments and from fruit gathered in the months of February and March.

Precipitation with absolute alcohol was carried out by mixing equal quantities of the ackee extract and absolute alcohol and allowing precipitation to continue for 24 hours. This was then filtered and the filtrate brought to the boil, cooled and allowed to settle for a further 24 hours. By this method the precipitate from *unopened ackees* was 2.3 per cent. of the extract, from *opened ackees, with embedded or normal seeds*, 3.9 per cent. by weight of the extract.

Precipitation with neutral lead acetate for 24 hours was followed by further precipitation of the filtrate with basic lead acetate for another 24 hours. By this method the neutral lead acetate precipitate from *unopened ackees with embedded seeds* was about 18 per cent. of the extract; from *unopened ackees with normal seeds* about 28 per cent. of the extract; and from *opened ackees, with normal or embedded seeds* about 24 per cent. of the extract; by weight. The basic lead acetate precipitate from *unopened ackees with embedded seeds* was 8 per cent. of the extract; from *unopened ackees with normal seeds* 7 per cent. of the extract; from *fully opened ackees with embedded seeds* 7 per cent.; and from *fully opened ackees with normal seeds* 4 per cent. by weight of the extract. After drying, the lead acetate precipitates gave positive sulphuric acid and Frøehde's tests for saponin.

Using the MULLER-HOSSLY (1917) method, saponin was removed from the ackee extracts as follows: In a narrow 100 c.c. cylinder 50 c.c. of the extract was neutralized with a sodium carbonate solution. The cylinder was set in a large funnel and a constant stream of air passed through the liquid by means of a tube extending to the bottom of the cylinder. The foam rising to and over the top was collected into a small graduated cylinder beneath the large funnel. The first 5.0 c.c. driven off by this method, from each 50 c.c. of the extract, was made isotonic by addition of 0.9 per cent. NaCl and used for the hæmolytic tests with a fresh 5 per cent. suspension of defibrinated human blood cells in normal saline.

TABLE II.
HAEMOLYSIS DILUTIONS.

Tube Number.			1	2	3	4	5	6	7	8	9	10
Blood suspension	c.c.	..	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Saline	c.c.	..	2.95	2.9	2.8	2.7	2.6	2.5	2.25	2.0	1.75	1.5
Saline ackee extract	c.c.	..	0.05	0.1	0.2	0.3	0.4	0.5	0.75	1.0	1.25	1.5

TABLE III.
HAEMOLYSIS IN ACKEE
EXTRACTS.

Unopened ackee.....	.....
Partly opened ackee embedded seeds	.....
Partly opened ackee normal seeds	.....

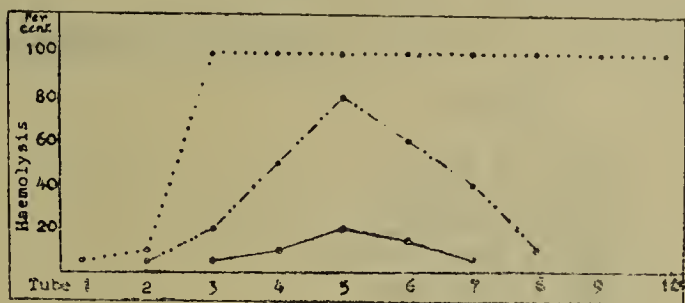


Table III expresses graphically the results of hæmolysis tests. The extract of *fully opened ackees* showed no hæmolysis in these dilutions; the extract of *partly opened ackees with embedded seeds* showed slight hæmolysis in Tube 3, maximum (20 per cent.) hæmolysis in Tube 5, and no hæmolysis in Tubes 7, 8, 9 or 10; the extract of *partly opened ackees with embedded seeds* gave slight hæmolysis in Tube 2, maximum (80 per cent.) hæmolysis in Tube 5, with no hæmolysis in Tubes 9 or 10; the extract of *unopened ackees* showed complete hæmolysis in Tube 3 to Tube 10, and slight hæmolysis in Tubes 1 and 2. The fact that hæmolysis does not occur beyond Tube 6 in the *partly opened ackee with normal seeds*, nor beyond Tube 8 in the *partly opened ackee with embedded seeds*, is a subject for further investigation. After the addition of cholesterol, these extracts gave negative hæmolysis tests.

Fat was extracted from the arilli of the ackee, at different stages of development, using ether as the solvent. The *unopened ackee* contained 11.3 per cent. of fat, the *partly opened ackee with embedded seeds* 16.5 per cent., the *partly opened ackee with normal seeds* 21.4 per cent., the *fully opened ackee with embedded seeds* 21.9 per cent., and the *fully opened ackee with normal seeds* 30.1 per cent. These extractions were carried out in April when the ackee contains a higher percentage of fat than during the winter months. During January and February *unopened ackees* contained as little as 5 per cent., and *fully opened ackees* 17 per cent. of fat.

The isolation of phytosterol from these fats proved difficult. There appears to be considerable variation in the amounts present in various stages of development. The fat from the *unopened ackee*, or from the *partly opened ackee with embedded seeds*, contains as little as 0.09 per cent., while the fat from the *partly opened ackee with normal seeds* contains about 0.16 per cent. of phytosterol.

CONCLUSIONS.

1. The arillus of the unopened ackee is lethal to kittens with a dose of 1.0 gramme per 100 grammes of kitten weight when administrated intragastrically.
2. The arillus of the unopened ackee is lethal to guineapigs when a dose of 3.5 grammes per 100 grammes of guineapig weight is given subcutaneously or intragastrically.
3. In the partly opened ackee the arillus with embedded seed is lethal to guineapigs in the same dose as the arillus from the unopened ackee, while the arillus with normal seed is not lethal to guineapigs in this dosage.
4. This toxic property is cumulative when repeated sub-lethal doses are given at daily intervals.
5. The arillus of the fully opened ackee is not lethal to guineapigs.
6. The postmortem findings, both in kittens and guineapigs, indicate an acute toxæmia affecting all organs with hæmorrhages and fatty changes, chiefly in the liver and kidneys.
7. The ackee contains a saponin, which is hæmolytic in some stages of the development of the fruit, and the toxic substance is very probably this saponin.
8. The saponin is strongly hæmolytic in the arillus of the unopened ackee; less so in the arillus with embedded seed of the partly opened ackee, being only slightly hæmolytic in those with normal seeds; while it is non-hæmolytic in the arillus of the fully opened ackee.
9. The fat content of the arillus varies with the stage of development of the ackee. There is little fat in the unopened ackee, most in the arillus of the fully opened ackee. The arillus with the embedded seed contains less fat than the arillus with the normal seed in all stages of development.
10. The toxicity of the arillus of the ackee varies inversely with the fat (and phytosterol) content. This is as would be expected; phytosterol fixing the saponin and rendering it non-hæmolytic and, as a consequence, non-toxic.
11. There is apparently a seasonal variation in the toxicity and fat content of the ackee. In the colder months (December to March) the fruit contains less fat and is apparently more toxic than at other times.
12. The unsuitability of herbivorous animals for this particular investigation is appreciated, but, even with this handicap, the findings appear to open several avenues for further investigation. In view of the age and seasonal incidences, particularly, in "vomiting sickness," immunological studies and experiments are being conducted to determine what part, if any, is played by photochemical and photodynamic action on the fat and phytosterol content and toxicity of the fruit.

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TABLE V.—Preparation of Media.

Media.	Quantity.
Broth for Waters	250,000 ml
Nutrient Agar	60,000 ml
Loeffler's Medium	8,000 ml
Ascitic Nutrient Broth	800 ml
Ascitic Fluid Agar	2,000 ml
Blood Agar	16,000 ml
Bile Broth	2,000 ml
20% Lactose	7,000 ml
20% Lactose 2% Dextrose	450 ml
Russell's Triple Sugar Agar	4,000 ml
1% Carbohydrate Agar	2,000 ml
Brilliant Green Agar	4,000 ml
Eosin Methylene Blue Agar	2,000 ml
Peptone Water	900 ml
Beef Extract Broth	6,000 ml
1% Sugar Broth	4,000 ml
Sarbouraud's Medium	600 ml

VIII.—VENEREAL DISEASES.

Report on Control of Venereal Diseases, 1938.

General.—The year 1938 has been marked by numerous changes in the Venereal Diseases programme of the Island. Perhaps the most important item in connection with this Department of the Medical Service was the visit of Colonel Harrison, Advisor on Venereal Diseases to the Ministry of Health. Colonel Harrison arrived in the Island on the 20th February, and remained until the 20th of March. The impressions of this month's study and observation were embodied in a report to Government which suggested many changes in construction, equipment and treatment technique. These items were put in hand at the earliest possible moment, and the end of the year found some completed and others in process of reorganization.

The Male and Female Clinics in Kingston have been remodelled along the lines indicated in Colonel Harrison's recommendations. In the Male Clinic a new Waiting Room has been built and the Treatment Cubicles completely reconstructed. The Female Clinic underwent similar changes which were still in hand at the close of the year. A Hot Water System available to both clinics was installed. In the midst of disturbance created by workmen over a prolonged period, treatment routine was maintained under great difficulty, but little or no ground was lost during this transition period.

This general re-arrangement has greatly facilitated rapidity and thoroughness of work. We are awaiting completion of the new Out-Patients' Department at the Kingston Public Hospital to build a Venereal Diseases Clinic, which will take care of in and out-patients.

Personnel.—On December 24, 1937, Dr. S. E. Ferreira took up duties as Medical Officer in charge of Venereal Diseases Clinics. His time has been fully spent re-organizing the work of the Clinics in Kingston, more especially the Male, visiting the two Clinics at Port Antonio and Montego Bay, and carrying out detailed examinations of chronic and relapsing cases of Gonorrhœa.

Dr. Wedderburn was transferred from the Yaws Clinic to the Male Clinic in Kingston on the 28th March, 1938.

Dr. Rose Butler Parboosingh resumed duties as Part-time Medical Officer in the Kingston Female Clinic on the 4th April, 1938, after four months' leave of absence. During her absence this branch of the Clinic was served by Dr. I. E. R. Parris.

Dr. G. E. Valentine resigned his post as Part-time Medical Officer in the Kingston Male Clinic on the 12th April, and was succeeded by Dr. I. E. R. Parris.

In the junior staff of all the Clinics many changes in the nature of additions, transfers and dismissals were effected.

Gonorrhœa.

Treatment.—In the treatment of Gonorrhœa greater emphasis has been laid upon the history of individual cases and no effort has been spared to make this as full as possible. Cases are referred for special examination when this is indicated by information arising out of the history. Male patients are examined more frequently.

Investigations on the effect of Streptoeide May & Baker 693, and Uleron in the treatment of Gonorrhœa have been carried out during the year with very encouraging results. Indications are that M & B 693 may yet prove to be the remedy for Gonorrhœa so long sought by Venereal Diseases experts.

Syphilis.—Facilities for Dark Field Examinations have been added to the Laboratory of the Clinics and have done much to improve accuracy in the diagnosis of syphilitic lesions—more particularly early cases.

Examination of urine before injection of anti-syphilitic remedies has become a routine procedure in both sections of the Clinics.

GOVERNMENT WELFARE OFFICER.

For three months Miss Kirby interviewed all female patients on their first attendance. She was able to assist materially in the education of the female patients, and helped in the reduction of delinquency to a considerable extent.

SUMMARY.

The work of the three clinics during the year 1938 is summarized as follows:—

TABLE I.

Kingston—Male.

	SYPHILIS.								GONNORRHOEA.										
	Admitted.	Total Attendance.	Neosphenamine.	Bismuth.	Medicine.	Sodium Thiosulphate.	Antimony Tartrate.	Dmeleos.	Admitted.	Total Attendance.	Irrigations.	Manganese Butyrate.	Vaccine.	Calcium Gluconate.	Massage.	Contramine.	Medicine.	Kollmann's and Sounds	Cured.
January	201	1,313	612	632	68	..	..	..	257	8,664	7,164	356	60	8	294	45	417	245	35
February	222	1,671	760	763	145	1	..	..	213	8,372	7,432	55	34	14	338	37	217	..	27
March	330	1,997	835	983	179	..	..	..	288	7,865	7,865	11	50	12	424	28	274	..	41
April	208	1,239	920	989	224	..	..	..	222	9,536	9,528	4	20	8	508	16	132	36	30
May	109	1,032	1,005	1,003	129	27	2	..	216	10,458	10,443	2	29	39	580	15	119	263	6
June	169	1,201	1,178	1,201	92	8	13	6	285	10,700	10,531	2	83	37	1,278	15	72	246	..
July	199	1,312	1,093	1,268	63	5	35	..	274	12,360	12,360	..	116	46	1,767	23	46	38	..
August	203	1,476	1,134	1,403	41	3	70	1	283	12,154	12,064	..	117	50	1,850	5	35	38	51
September	174	1,431	1,140	1,358	73	14	84	12	269	10,715	10,715	..	230	31	1,793	15	28	518	9
October	190	1,296	820	1,208	..	19	67	2	263	10,677	10,677	..	305	57	1,811	25	26	690	36
November	188	1,273	532	1,179	56	24	64	2	242	10,135	10,135	..	269	54	1,788	39	33	924	80
December	96	1,136	310	1,065	30	10	52	9	219	8,684	8,684	..	277	52	1,262	33	25	682	51
Total	2,299	16,377	10,135	13,052	1,100	111	387	32	3,041	120,320	117,593	430	1,590	405	13,693	296	1,421	3,680	366

TABLE II.

Kingston—Female.

		SYPHILIS.					GONORRHOEA.						
		Admitted.	Total Attendance.	Neosphenamine.	Bismuth.	Medicine.	Admitted.	Total Attendance.	Tampons.	Manganese Butyrate.	Proseptacin.	Medicine.	Cured.
January	..	99	1,603	727	766	106	233	5,458	5,088	172	..	188	3
February	..	112	1,875	848	875	147	248	6,994	5,605	230	..	141	2
March	..	130	2,477	1,056	1,196	216	263	7,806	7,440	169	..	149	1
April	..	113	1,889	748	883	242	212	7,077	6,801	112	38	126	1
May	..	112	1,913	809	868	201	269	6,618	6,369	108	30	111	..
June	..	128	2,022	959	998	55	325	7,014	6,891	92	20	11	2
July	..	133	2,384	1,153	1,190	15	334	11,580	11,293	34	76	179	..
August	..	140	2,636	1,224	1,314	56	314	11,619	11,432	..	75	112	..
September	..	143	2,662	1,276	1,316	37	336	11,098	10,867	..	127	104	..
October	..	115	2,789	1,256	1,420	23	285	10,324	10,123	..	..	100	..
November	..	120	2,619	1,245	1,298	25	239	11,047	10,856	..	..	88	..
December	..	76	2,070	989	1,001	20	153	9,238	9,053	..	..	83	1
Total	..	1,421	26,949	12,290	13,122	1,143	3,221	105,873	61,818	917	366	1,392	11

TABLE III.

Montego Bay—Male.

	SYPHILIS.					GONORRHOEA.										
	Admitted.	Total Attendance.	Neosarsphenamine.	Bismuth.	Medicine.	Admitted.	Total Attendance.	Irrigations.	Manganese Buty-rate.	Vaccine.	Calcium Gluconate.	Massage.	Contramine.	Medicine.	Kollmann's and Sounds.	Cured.
January	85	595	209	203	51	71	1,265	918	125	3	3	49	4	125	..	..
February	51	484	215	202	36	55	919	634	125	19	4	21	2	74	..	..
March	62	477	222	226	21	51	1,109	808	107	57	..	36	..	66	..	..
April	50	513	236	244	33	45	868	574	113	19	16	30	1	91	19	..
May	65	380	173	185	21	66	1,110	872	80	19	2	13	4	56	14	1
June	46	499	232	248	18	67	969	876	5	18	4	37	1	26	1	..
July	59	778	314	368	59	55	1,272	1,125	..	14	3	89	1	35	3	..
August	85	799	364	432	3	77	1,469	1,330	..	1	13	102	..	6	1	1
September	56	716	329	385	..	60	1,325	1,140	..	..	3	74	..	19	35	..
October	48	753	336	411	3	46	1,321	1,086	..	..	..	85	..	9	53	..
November	65	662	286	369	5	64	1,327	1,042	..	..	..	91	..	..	96	..
December	35	667	309	354	2	38	1,039	858	..	..	..	64	..	1	52	7
Total	707	7,323	3,225	3,627	242	695	14,993	11,263	555	150	48	691	13	508	274	9

TABLE IV.

Montego Bay—Female.

	SYPHILIS.					GONORRHOEA.						
	Admitted.	Total Attendance.	Neosphenamine.	Bismuth.	Medicine.	Admitted.	Total Attendance.	Tampons.	Manganese Butyrate.	Vaccine.	Medicine.	Cured.
January	37	616	240	269	70	47	1,435	1,255	41	83	56	..
February	33	613	283	287	30	31	1,205	1,100	33	32	40	..
March	26	585	276	277	31	47	1,128	1,050	26	47	24	..
April	25	442	205	205	32	29	802	729	4	35	33	..
May	30	290	132	132	26	38	910	873	6	18	13	..
June	25	401	188	188	25	35	748	712	3	13	20	..
July	25	524	237	237	50	26	707	654	4	8	41	..
August	39	572	272	277	20	24	750	703	..	11	26	..
September	30	599	283	296	20	30	898	875	..	..	11	..
October	32	647	311	321	6	15	890	870	..	..	3	..
November	34	678	312	365	..	30	1,015	995	..	..	13	..
December	14	644	286	337	2	3	833	826	..	..	2	..
Total	350	6,611	3,025	3,291	312	355	11,331	10,642	117	247	282	..

TABLE V.

Port Antonio—Male.

		SYPHILIS.				GONORRHOEA.									
		Admitted.	Total Attendance.	Neosphenamine.	Bismuth.	Medicine.	Admitted.	Total Attendance.	Irrigations.	Manganese Butyrate.	Calcium Gluconate.	Massage.	Contraime.	Medicine.	Kollmann's and Sounds.
January	..	32	500	206	273	21	33	1,120	602	149	..	45	4	312	..
February	..	28	498	206	257	35	41	1,020	514	170	..	35	12	276	..
March	..	52	673	280	341	52	43	1,201	897	118	..	61	7	97	..
April	..	60	586	223	312	51	42	972	761	114	..	45	9	27	..
May	..	35	496	189	285	22	31	685	519	..	..	46	7	23	..
June	..	37	337	115	163	59	34	582	415	..	..	44	7	28	..
July	..	42	..	132	181	34	40	..	591	112	11	64	8	57	..
August	..	33	249	202	241	21	43	691	669	88	10	75	12	62	58
September	..	38	257	217	245	89	41	613	608	61	5	57	..	24	..
October	..	74	296	207	296	..	35	770	765	..	1	61	4	22	..
November	..	31	503	231	310	..	36	689	686	..	3	91	2	4	..
December	..	28	198	111	152	..	30	491	487	..	4	55	11	15	25
Total	..	490	4,593	2,319	3,056	384	449	8,834	6,514	812	34	679	83	947	83

TABLE VI.

Port Antonio—Female.

	SYPHILIS.				GONORRHOEA.						
	Admitted.	Total Attendance.	N.A.B.	Bismuth.	Medicine.	Admitted.	Total Attendance.	Tampons.	Manganese Butyrate.	Vaccine.	Medicine.
January	23	490	199	284	7	28	868	782	53	..	82
February	13	528	215	267	46	53	1,007	822	46	29	99
March	22	738	275	371	92	58	1,598	1,292	94	117	106
April	20	745	262	424	59	90	1,161	1,339	73	128	57
May	20	736	259	422	53	41	1,395	1,082	108	155	44
June	18	542	190	324	28	34	1,097	918	34	135	2
July	24	600	226	364	10	39	1,097	913	49	106	14
August	21	526	215	310	1	27	939	792	49	81	17
September	22	452	205	247	..	14	633	557	1	38	37
October	14	491	216	268	..	19	657	589	3	22	16
November	18	607	260	335	..	25	831	764	5	22	12
December	9	440	182	255	..	17	635	584	..	..	17
Total	224	6,896	2,704	3,871	296	435	11,918	10,434	525	833	503

WORK DONE IN LABORATORY OF VENEREAL DISEASES CLINICS, 1938.

Smears.

<i>Men's Clinics—</i>				
Kingston	..	..	..	9,445
Montego Bay	..	..	..	849
Port Antonio	..	..	..	493
<i>Women's Clinics—</i>				
Kingston	..	..	..	4,373
Montego Bay	..	..	..	562
Port Antonio	..	..	..	501
				<hr/> 16,223 <hr/>

Urines.

<i>Men's Clinics—</i>				
Kingston	..	..	..	1,407
<i>Women's Clinics—</i>				
Kingston	..	..	..	1,006

Bloods.

<i>Men's Free Clinics—</i>				
Kingston	..	..	..	6,641

S. E. FERREIRA,
Medical Officer i/c Venereal Diseases Clinics.

IX.—TUBERCULOSIS.

The Tuberculosis Clinic was moved from its old premises to a new permanent building in February, 1938. These new premises were part of the expenditure under the Loan Programme, and consist of three consulting rooms, large waiting hall, filing rooms for X-ray films and records, nurses' room, typists' room, and small dispensary and laboratory. The work of the Dispensary has been greatly facilitated by adequate premises. The attendance of patients, both old and new has increased so rapidly that it is difficult to imagine how the work could have been carried on from the old premises.

Dr. Eugene Gideon left the staff of the Dispensary in March, 1938, and his place has been filled by a succession of supernumeraries, who have each served from two to three months with the Dispensary for the purpose of obtaining an insight into the Tuberculosis work of the Island. This system is proving extremely satisfactory as evinced by an increased number of patients referred from the Public Hospital by doctors who have thus had the opportunity of doing a course in Tuberculosis.

Table I gives the numerical record of the work done in the Dispensary. A total of 5,433 new patients were examined, of whom 2,303 received X-ray examination. There were 533 cases of Pulmonary Tuberculosis, of which 45 occurred among old patients. In addition there were 91 cases of Latent and Childhood Type Tuberculosis, and 72 cases of Suspected Tuberculosis, the majority of these suspected cases being pleurisies. The attendance of old patients, exclusive of Pneumothorax cases, was 9,178, and the nurses paid 4,188 visits to patients from their homes.

The routine laboratory procedures at the Dispensary have been augmented by carrying out blood sedimentation tests on selected cases. It is hoped to extend this procedure in the next year. 4,485 sputum examinations were made and 5,008 X-ray examinations, in addition the Travelling X-ray Unit visited every parish in the Island (see Table 2) travelling 5,082 miles and taking 3,713 films.

Continued good results were observed by treatment from Artificial Pneumothorax, and 209 new cases received the benefit of this treatment during the year. The total number of refills given was 6,604, of which 1,211 were performed at the Tuberculosis Hospital.

The Tuberculosis Hospital at Admiral Pen continued to do good work during the year. The average number of in-patients was 53. 28 deaths occurred in the institution. There were 124 admissions and 85 patients were discharged, 57 patients remaining in the institution at the end of the year. Treatment by Pneumothorax was continued both on patients in the Hospital and on patients from the Poor House wards, 1,211 refills were given in the institution. Other therapeutic procedures were as follows:—

Internal Pneumonolyses	..	..	72
Phrenic Crushing or Avulsion	..	..	40
Bronchoscopy	..	..	29
Miscellaneous minor surgical operations	..	..	3
Thoracoplasty	..	..	27

The operations for Thoracoplasty were all performed at the Kingston General Hospital through the co-operation and courtesy of Dr. Westmorland and the Hospital anæsthetists.

The demand of patients for admission far exceeds the number of beds available, so that the institution is permanently over-crowded. The nursing staff has been increased by one additional nurse to meet this demand, and increased cooking facilities have relieved the kitchen congestion.

When the Jubilee Memorial Sanatorium is opened a large number of the patients now in this institution will be transferred, and it is hoped that the far advanced, hopeless cases now housed in the old wards at the Poor House may be transferred to the present Tuberculosis Hospital, where they will be afforded better attention and services than they now obtain.

The Poor House Wards have been over-crowded throughout the whole year, particularly on the female side. There has been some improvement of the general conditions in these wards, but the nursing attendance and diet are still far from adequate. There was a total of 272 inmates during the year, of whom 79 remained at the end of the year. There were 139 deaths, of which 40 occurred less than two weeks after admission. Ten non-tuberculous cases were admitted to the wards and were either discharged or transferred to other wards. 13 cases were transferred to the Tuberculosis Hospital and 12 were discharged improved, of whom 1 was subsequently re-admitted and died. 7 patients were discharged to relatives at their own request, suitable arrangements having been made for them as out-patients. 13 men and 1 woman absconded, 3 of the men being subsequently re-admitted and dying in the institution. The large number of patients absconding is due to the atmosphere of hopelessness and unpalatable food prevailing in the wards, and also no form of occupation for any of the inmates, so it is only surprising that discontent is not more in evidence than it is. The average number of inmates in these wards remains so high that it is obvious that all cannot be transferred to the present Tuberculosis Hospital when the patients from the Institution are transferred to the Memorial Sanitarium, and it is very desirable that improvement to these wards should be effected in the near future.

TUBERCULOSIS THROUGHOUT THE ISLAND.

There has been a steady decrease in the deaths occurring from Pulmonary Tuberculosis in the ten years from 1927 to 1937; this decrease has been shown in actual numbers and per 100,000 of the population—see graph appended. In addition to the deaths which are actually notified as occurring from Pulmonary Tuberculosis, it has been estimated that about one-third of the deaths from “fever not otherwise defined” are really due to Pulmonary Tuberculosis, but, as will be seen from the graph, these figures are also showing satisfactory decrease. Comparative figures for Eire, Northern Island, England and Wales are given.

This satisfactory decrease in Tuberculosis mortality has been accompanied by improved notification of cases. (See Table 3). It will be noted that there has been an increase in the notifications of Tuberculosis in 1938, above that in 1937, and that the majority of this increase has taken place in the parishes of Kingston and St. Andrew. One reason for this appears to be that an ever-increasing number of patients are coming into Kingston and St. Andrew for the purpose of attending the Tuberculosis Dispensary, and such patients are notified from their Kingston addresses, although many of them have been resident for only a few days or weeks.

A census of Kingston and St. Andrew was carried out by the Sanitary Department and the estimated population for Kingston is 83,900, while that of St. Andrew is approximately 87,500. It will therefore be seen that according to the notifications nearly one-half of the Pulmonary Tuberculosis of the Island is occurring in approximately one-tenth of the population.

Table 4 shows the Island notifications by month for the year 1938.

The rural and small town surveys carried out by Dr. Flahiff of the Rockefeller Foundation have afforded us the following figures:

Estimated number of cases of Pulmonary Tuberculosis in large and small towns 938 cases. Rural areas 404 cases, giving a total of 1,342 living cases of Pulmonary Tuberculosis outside Kingston and St. Andrew. It is probable that about 60% of these cases are known to the Medical Officers of Health. A similar estimate of the number of living cases in Kingston and St. Andrew is about 1,200.

The Tuberculosis work in the differing parishes varies considerably, some of the Medical Officers of Health conduct regular clinics as in Manchester and St. James. In all parishes the Medical Officer of Health visits notified cases in their homes and some supervision is maintained through the Sanitary Inspectors.

During the year special Tuberculosis Wards have been attached to the following country hospitals:—Linstead, St. Ann's Bay, Port Maria, Mandeville, Lucea and Sav-la-Mar. These wards are doing excellent work and the two first opened, Linstead and St. Ann's Bay, are always full with a waiting list of patients desiring admission, and there is no doubt that as the newer wards become more widely known they too will be completely filled. The District Medical Officers in each of these wards are carrying on Pneumothorax treatment and Phrenic Avulsion, and it is likely that in the ensuing year there will be an increased demand for visits from the Travelling X-ray Unit at short intervals, so that the results of surgical treatment can be carefully checked.

Adequate Poor House accommodation is lacking in most parishes, though Manchester, St. Ann and St. Mary are noteworthy exceptions; and in these three parishes the wards are excellent and are reasonably well filled. No ward of any description exists in St. Catherine or Clarendon, while the accommodation in St. Thomas and St. Elizabeth is extremely bad. The improvement of the Poor House wards with special diet and efficient medical supervision is the greatest need of the country parishes, together with improved home supervision through the Medical Officer of Health, Sanitary Inspectors, and where possible public health nurses.

TABLE I.—Tuberculosis Clinic, Kingston.

Annual Report for the year 1938.

NEW PATIENTS:

Clinical and X-Ray Examinations—

(a) For diagnosis	..	..	..	1,218	
(b) For contact	..	..	..	1,085	
(Referred by Doctors 697)	..	..	..	..	2,303 Total

Clinical Examinations alone—

(a) Retained on records (observation)	..	..	..	1,045	
(b) Discharged, or referred elsewhere	..	..	..	1,185	2,230 Total

Summary of Diagnoses—

Pulmonary Tuberculosis in new patients, sputum positive	391	
Pulmonary Tuberculosis in new patients, sputum negative	85	
Pulmonary Tuberculosis (quiescent or arrested)	12	
Latent Tuberculosis	41	
Childhood type Tuberculosis	50	
Suspected Tuberculosis	72	
Calcified Lesion	82	
Not complete	65	
Extra Pulmonary Tuberculosis	1	
No Tuberculosis	1,504	2,303 Total
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OLD PATIENTS:		
Number of old patients attending	9,178	
Total attendance of old patients		
Pulmonary Tuberculosis developing in old patients, sputum positive	29	
Pulmonary Tuberculosis developing in old patients, sputum negative	16	
Pulmonary Tuberculosis formerly sputum negative, now sputum positive	19	
Deaths reported during the month	242	
Cases notified to Central Board of Health	476	9,960 Total
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NURSES VISITS:		
Nurse Richardson	1,070	
Nurse Harris	979	
Nurse McPherson	1,061	
Nurse Penman	1,078	4,188 Total
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DIAGNOSTIC METHODS:		
<i>Sputum Examinations—</i>		
Positive	1,119	
Negative	3,366	4,485 Total
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<i>X-Ray Examinations—</i>		
New cases	2,315	
Retakes	2,550	
Private cases	143	5,008 Total
<hr/>		
Number of Cases X-rayed by Travelling Unit		3,713
Lipiodol Bronchograms		
Bronchoscopy	29	
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THERAPEUTIC PROCEDURES:		
<i>Artificial Pneumothorax—</i>		
Inductions (38 at Hospital)	209	
Refills (1,211 at Hospital)	6,604	6,824 Total
<hr/>		
Phrenic Crushing, or Avulsion	40	
Scaleniotomy		
Internal Pneumolysis	72	
Thoracoplasty	27	
Miscellaneous	3	

Table II.

The following parishes were visited by the Travelling Unit during the year, 1938.

Parish.	No. of visits.
St. Thomas	1
St. James	3
Trelawny	2
Manchester	2
Portland	2
Clarendon	2
St. Ann	3
St. Mary	4
Westmoreland	2
Hanover	2
St. Catherine	2
St. Elizabeth	1
Total Number of Visits paid for the year	26
Total Number of Miles travelled	5,082
Total Number of Cases X-rayed	3,713
(This includes 118 films of School Children in Clarendon).	

TABLE III.—Notifications of Pulmonary Tuberculosis and Deaths registered as Pulmonary Tuberculosis.

Year.	Kingston.	St. Andrew.	St. Thomas.	Portland.	St. Mary.	St. Ann.	Trelawny.	St. James.	Hanover.	Westmoreland.	St. Elizabeth	Manchester.	Clarendon.	St. Catherine.	Total.	Deaths.
1927	..	84	24	49	34	65	6	40	29	13	24	42	43	77	797	1,295
1928	..	156	39	49	41	60	23	54	25	19	12	35	58	61	933	1,245
1929	..	149	38	47	62	57	30	42	9	34	19	40	65	67	1,007	1,245
1930	..	131	50	36	83	73	49	55	10	27	18	36	63	97	1,082	1,297
1931	..	171	64	44	86	108	43	100	17	14	37	35	87	74	1,327	1,456
1932	..	155	72	66	92	83	27	120	24	32	27	35	67	96	1,307	1,252
1933	..	140	35	76	102	99	44	77	24	29	32	30	80	112	1,241	1,191
1934	..	144	108	65	80	88	43	84	28	30	52	64	79	121	1,402	1,113
1935	..	136	58	46	87	106	29	64	28	49	62	59	91	127	1,395	1,095
1936	..	165	47	36	81	109	31	74	29	48	52	54	89	173	1,453	1,083
1937	..	112	45	52	75	135	30	80	41	47	61	54	81	127	1,310	1,019
1938	..	158	65	81	72	97	27	100	26	39	59	52	76	85	1,376	1,083

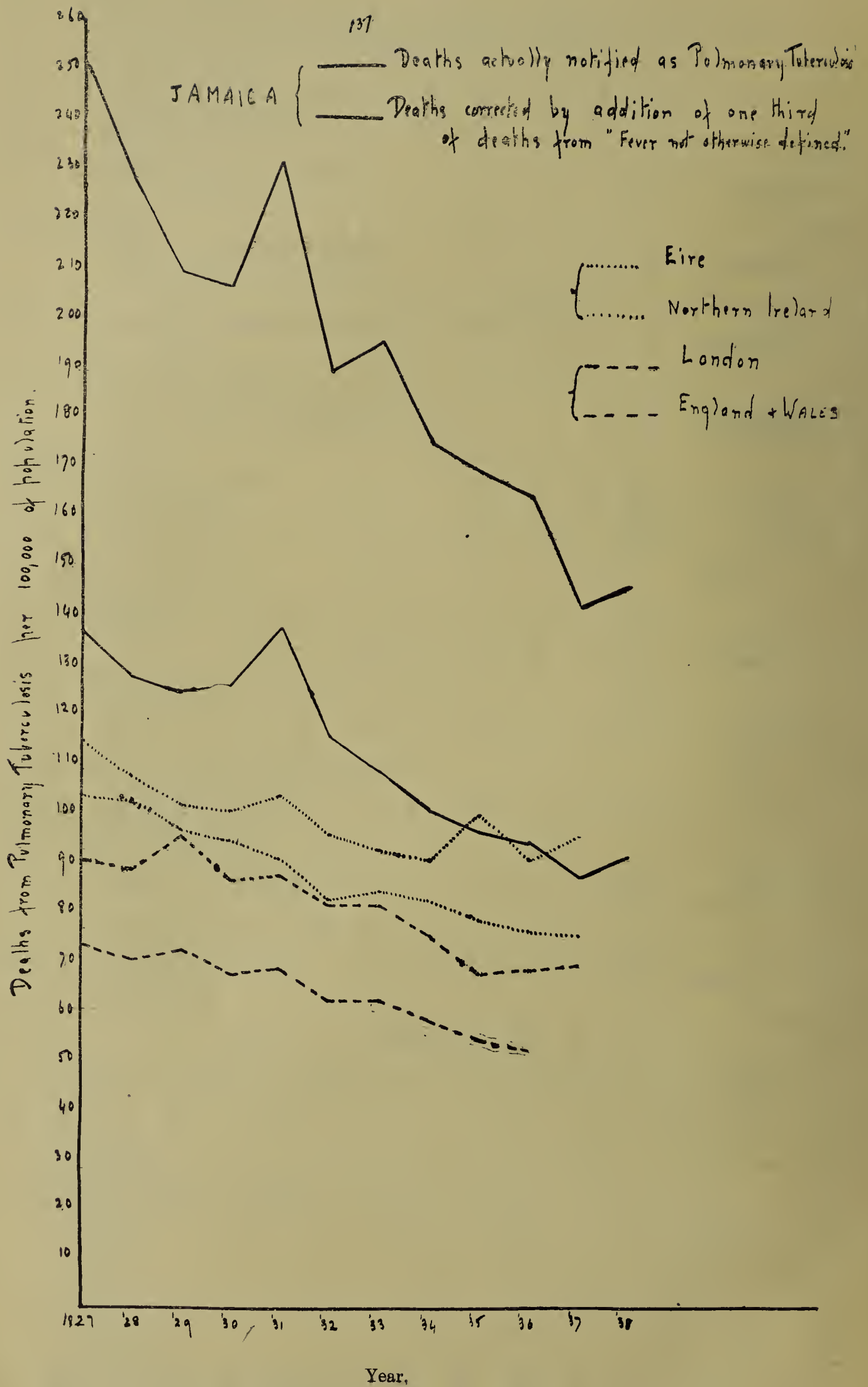


Table IV.—Number of Cases reported for the year 1938—Pulmonary Tuberculosis.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Kingston ..	29	31	41	33	46	43	46	30	39	36	37	28	439
St. Andrew ..	18	11	19	12	13	11	11	16	21	8	11	7	158
St. Thomas ..	7	4	9	9	7	5	4	3	4	2	5	6	65
Portland ..	9	7	4	1	16	23	4	2	3	6	3	3	81
St. Mary ..	2	7	5	6	3	6	8	5	7	3	7	13	72
St. Ann ..	10	10	13	7	5	13	2	7	8	10	5	7	97
Trelawny ..	1	..	4	4	1	1	2	9	1	3	1	..	27
St. James ..	19	11	6	8	10	5	6	11	9	4	5	6	100
Hanover ..	..	2	..	2	4	..	2	6	2	3	2	3	26
West- moreland	2	2	3	1	4	5	5	6	2	..	2	7	39
St. Elizabeth	1	7	8	5	2	7	5	5	2	5	9	3	59
Manchester	4	..	3	8	3	6	6	6	3	1	6	6	52
Clarendon ..	8	3	6	2	9	10	8	7	5	4	7	7	76
St. Catherine	13	8	13	6	9	2	6	9	2	4	8	5	85
Total ..	123	103	134	104	132	137	115	122	108	89	108	101	1,376

TABLE I.—Finance.

Return showing cost per occupied bed per annum for the year ended 31st December, 1938.

Hospitals.	Average No. of Beds occupied.	Cost of Staff.	Other Charges.	Total.	Cost per occupied bed per annum.					
					Staff.			Other Charges.		
		£ s. d.	£ s. d.	£ s. d.	£	s.	d.	£	s.	d.
Public Hospital, Kingston ..	388	19,368 2 2	19,785 9 5	39,153 11 8	49	18	4	50	19	10
Jubilee Hospital ..	90	3,711 14 4	3,771 9 8	7,483 4 0	41	4	10	41	18	1
Leper's Home ..	162	805 9 3	2,785 13 10	3,591 3 1	4	19	5	17	5	2
Morant Bay Hospital	35	576 16 4	996 2 4	1,572 18 8	16	9	7	28	9	3
Hordley “	34	630 12 6	822 6 11	1,452 19 5	18	10	11	24	3	1
Port Antonio “	58	1,041 5 2	1,223 0 11	2,264 6 1	17	19	1	21	1	9
Buff Bay ..	50	890 8 6	988 0 10	1,878 9 4	17	16	2	19	15	3
Annotto Bay “	60	989 6 1	1,346 5 2	2,335 11 3	16	9	9	22	8	9
Port Maria “	98	1,258 18 4	2,063 0 6	3,321 18 10	12	16	11	21	1	0
St. Ann's Bay “	81	1,150 8 7	2,041 15 3	3,192 3 10	14	4	1	25	4	2
Cave Valley “	12	333 3 10	411 14 10	744 18 8	27	15	4	34	6	3
Falmouth “	27	693 19 10	727 4 4	1,421 4 2	25	14	1	26	18	8
Ulster Spring “	12	360 2 11	441 10 9	801 13 8	30	0	3	36	15	11
Montego Bay “	120	1,847 2 2	3,378 2 9	5,225 4 11	15	7	10	28	3	0
Lucea “	35	651 17 0	913 3 1	1,565 0 1	18	12	6	26	1	10
Sav.-la-Mar “	73	1,437 8 10	1,869 4 3	3,306 13 1	19	13	10	25	12	1
Black River “	85	1,237 7 3	2,135 2 0	3,372 9 3	14	11	2	25	2	5
Mandeville “	56	968 17 6	1,573 18 5	2,542 15 11	17	6	0	28	2	1
Chapelton “	60	770 10 11	1,553 18 0	2,324 8 11	12	16	10	25	18	0
Lionel Town “	45	771 16 11	1,015 6 3	1,787 3 2	17	3	1	22	11	3
Spanish Town “	102	1,514 4 3	2,186 8 3	3,700 12 6	14	16	11	21	8	8
Linstead “	76	1,186 13 6	1,746 15 4	2,933 8 10	15	12	3	22	19	8
	1,759	42,196 6 3	53,775 13 1	95,971 19 4	439	19	2	596	6	10
Mental Hospital ..	2,151	26,603 8 10	20,837 2 4	47,440 11 2	12	7	4	9	13	9

Table II.—Return showing the value of Drugs, etc., supplied to the various Institutions from the Island Medical 1.1.38 to 31.12.38.

	£	s.	d.
Value of Drugs and Sundries issued to Public General Hospitals, Lepers' ..			
Home and Medical Districts	8,936	5	10
" Stimulants issued to Public General Hospital	20	8	10
" Drugs issued to Dispensaries	965	6	5
" Drugs, etc., issued to Medical Officers of Health	177	14	4
" Drugs, etc., issued to Public Health Nurses	15	7	6
" Drugs, etc., issued to Public Hospital, Kingston	7,037	15	11
" Stimulants issued to Public Hospital, Kingston	7	11	5
" Drugs, etc., issued to Jubilee Hospital, Kingston	694	13	0
" Stimulants issued to Jubilee Hospital, Kingston	1	13	8
" Drugs, etc., issued to Mental Hospital, Kingston	251	0	4
" Drugs, etc., issued to Prisons and Industrial School	375	12	10
" Drugs, etc., issued to Department of Agriculture	16	3	5
" Drugs, etc., issued to Quarantine Board	38	18	4
" Drugs, etc., issued to Parochial Boards	708	18	2
" Stimulants issued to Kingston and St. Andrew Corporation	0	1	10
" Drugs, etc., issued to Constabulary Department	27	19	4
" Drugs and Sundries sold	417	12	0
" Lymph sold	11	6	6
" Lymph issued to Medical Officers	434	1	1
" Drugs, etc., issued to Mobile Health Units (Yaws and other Communicable Diseases)	292	14	8
" Quinine issued to Post Offices for packets	793	16	1
" Quinine Envelopes for Packets	12	13	2
" Quinine issued to Schools	35	5	0
" Drugs, etc., issued to Jamaica Government Railway	21	5	10
" Drugs, etc., issued to Tuberculosis Clinics	832	16	9
" Drugs, etc., issued to Malaria Commission	70	4	10
" Drugs, etc., issued to Venereal Diseases Clinics	1,382	7	8
" Drugs, etc., issued to Child Welfare Association	45	5	6
" Drugs, etc., issued to Manchester Maternity Hospital	30	18	1
" Drugs, etc., issued to Sanitary School	0	2	4
" Drugs, etc., issued for Examination use	0	19	3
" Sundries issued to Island Medical Office	7	2	6
" Sundries issued to Island Medical Stores	18	5	5
Total	£23,682	7	10

TABLE III.—The following Table shows the amount of Quinine issued from the Medical Stores during 1938.

Quinine Sulphate Tablets—

	lbs.	ozs.
Public Hospitals	11	4
Dispensaries	13	12
Parochial Boards	7	2
Prisons	2	4
Tuberculosis Clinics	11	..
Venereal Diseases Clinics	1	..
Medical Officers (Health)	50	..
Local Forces	1	8
Quarantine Board .. .. .	..	2
Police	17	..
Department of Education	20	..
Post Office	450	..
Yaws Units (Mobile Health Units)	5	8
Malaria Commission	27	..
Public Health Nurses .. .. .	..	8
Jamaica Government Railway	1	12
Department of Agriculture .. .. .	..	4
Women's Self Help .. .. .	..	8

Quinine Sulphate—

Public Hospitals	344	6
Dispensaries	69	11
Parochial Boards	11	14
Prisons	11	9
Tuberculosis Clinics	4	11
Venereal Diseases Clinics	1	4
Medical Officers (Health)	4	1

				lbs.	ozs.
Local Forces	..	..	..	..	10
United Fruit Company	..	..	..	31	4
Child Welfare Association	..	..	..	3	2
<i>Quinine Bihydrochlor Ampoules—</i>					
Public Hospitals	..	..	..	6,320	
Dispensaries	..	..	..	381	
Tuberculosis Dispensary	..	..	..	12	
Prisons	..	..	..	50	
<i>Quinine Bihydrochloride—</i>					
Public General Hospitals	..	..	..	3	12

During the year two examinations were held under Law 20 of 1926, "The Sale of Drugs and Poisons Law" at which 76 candidates presented themselves including 13 from the Public Hospital, Kingston.

Thirty-two of these including 10 from the Public Hospital, Kingston, satisfied the Examiners and were granted Licenses.

TABLE IV.—Return of Cases in the Kingston and St. Andrew Corporation Hospital for Infectious Diseases (for a 5-year period).

Admission.	1934.	1935.	1936.	1937.	1938.
Chicken Pox	..	1	..	4	2
Measles	2	..
Syphilis
Diphtheria	1	1	..	1	1
Scarlet Fever	1	..	..

I. J. CRUCHLEY,
Medical Officer of Health, Kingston and
St. Andrew.

MEDICAL DEPARTMENT.

Report for the year ended 31st December, 1938.

PART II.

SPECIAL TUBERCULOSIS "VACCINATION" STUDIES IN JAMAICA,

(By Dr. E. W. FLAHIFF of the Rockefeller Foundation).

(a) *Report of the work done at the Mental Hospital during the year 1938.*

During the year 1938, the work at the Mental Hospital proceeded along the same general lines as in previous years except for a change in the dosage of "vaccine". This change took place about the middle of the year and will be described later in the report.

In Table I is presented the results of tuberculin tests and X-ray examinations of new admissions during the year 1938. It will be seen that there were 516 new admissions to the institution. This number does not include 4 old "vaccinated" cases and one control who were readmitted to the institution; no X-ray lesions were found among these five and they were reassigned to their respective groups as "vaccinated" or control cases. The new admissions, however, do include 82 old tuberculin positive readmissions, 6 of whom died in 1938, and 13 were again discharged during the year. It will, therefore, be seen that 16.7 per cent. of all admissions for the year were readmissions (13.7 per cent. in 1937). 257 (or 49.8 per cent.) of the admissions were male, and 259 (50.2 per cent.) were female.

Of the 516 new admissions, 460 (89.1 per cent.) received a tuberculin test within one month after admission (82.7 per cent. in 1937) 88.7 per cent. of the male admissions and 89.6 per cent. of the female admissions were tuberculin tested. 209 (91.7 per cent.) of the male were tuberculin positive and 200 (86.2 per cent.) of the females were tuberculin positive.

TABLE I.—The Results of Tuberculin Tests and X-ray Examinations of New Admissions to the Mental Hospital during the year 1938.

Age.	Sex.	Total Number in Group.	Number with Complete Tuberculin Tests.	Number Tuberculin Positive.	Number Tuberculin Negative.	Per Cent. Tuberculin Positive.	X-ray Diagnosis.										Total Number X-rayed.						
							Calcified Pulmonary Nodules.	Pulmonary Infiltration Childhood.	Tracheo-bronchial Lymph Nodes.		Latent Apical.	Pulmonary Tuberculosis.		No Tuberculosis.	Suspected Tuberculosis.	Diagnosis Incomplete.		Type Tuberculosis.					
									Calcified.	Caseous.		Sputum Positive.	Sputum Negative.					Childhood.	Adult.	Undetermined.			
0-9	M	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	F	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10-19	M	21	16	13	3	..	1	..	1	..	..	..	..	13	..	..	..	..	..	..	..	..	15
	F	17	15	12	3	..	..	..	1	..	..	..	..	14	..	..	..	..	..	..	..	..	15
20-29	M	91	85	76	9	..	1	..	1	1	..	..	..	82	1	1	1	..	..	..	..	..	88
	F	78	71	57	14	..	4	..	2	2	..	..	1	64	2	..	..	..	..	..	1	..	75
30-39	M	67	63	58	5	..	2	..	..	..	2	..	..	58	..	..	..	..	..	..	..	..	62
	F	72	66	59	7	..	..	..	4	..	1	..	2	53	1	1	1	..	..	..	..	1	62
40-49	M	37	30	28	2	..	1	..	..	..	1	..	..	29	1	1	1	..	..	..	..	..	33
	F	43	39	36	3	..	3	..	3	..	..	..	..	34	1	..	..	..	..	..	..	..	41
50-59	M	19	17	17	..	..	2	..	1	..	..	..	..	14	..	..	..	..	..	..	..	..	17
	F	26	23	20	3	..	2	..	1	..	..	..	1	20	1	..	1	..	..	..	..	..	25
60	M	22	17	17	..	..	3	..	2	..	1	..	..	9	1	1	1	..	..	..	..	..	17
	F	23	18	16	2	..	1	..	1	..	1	..	..	11	2	..	..	..	..	..	..	..	16
Total	M	257	228	209	19	..	10	..	5	1	4	..	1	205	3	3	3	1	..	..	..	..	232
	F	259	232	200	32	..	10	..	12	..	4	..	4	196	7	1	1	2	..	..	2	..	234
Total	..	516	460	409	51	..	20	..	17	1	8	..	5	401	10	4	4	3	..	..	2	..	466

32 females did not react to 1.0 mg. of O.T. on admission. 15 of those individuals were added to the "vaccinated" group and are still in the institution. 13 were added to the control group, but 2 have died and 2 were discharged before the end of the year. The remaining 4 female non-reactors were not considered suitable for either group due to acute illness or advanced age at the time of admission.

19 males did not react to 1.0 mg. of O.T. on admission. 4 of these individuals were added to the "vaccinated" group, but one was discharged and one died before the end of the year. 5 were added to the control group, but two were discharged and one died before the end of the year. The remaining 10 male non-reactors were not considered suitable for either group for the same reasons as given above for the female non-reactors.

In addition to the losses in the "vaccinated" and control groups noted above, 4 old controls and 8 old "vaccinated" cases were discharged in 1938, and 14 old controls and 13 old "vaccinated" cases died during the year. However, with the addition of the new cases and readmissions during the year, the total number of "vaccinated" cases under observation at the end of the year was 80, the same number as at the end of 1937. The total number under observation at the end of the year in the control group, however, dropped to 55.

Referring again to Table I, it may be seen that 466 (90.3 per cent.) of the new admissions received X-ray examination of the chest (86.1 per cent. in 1937). 90.3 per cent. of the male admissions received an X-ray examination of the chest, and 90.3 per cent. of the female admissions. Among the new admissions X-rayed were found 5 cases of manifest pulmonary tuberculosis (1.07 per cent.), 8 cases of latent apical tuberculosis (1.7 per cent.), one case of caseous lymph nodes, and 37 calcified lesions (7.9 per cent.)

In addition to the new admissions, we also X-rayed old "vaccinated" and control cases at intervals of approximately four months, and also re-X-rayed as many as possible of the old tuberculin positive admissions. A total of 1,547 X-rays was taken during the year (1,384 in 1937).

In Table II is presented the number of "vaccinated" and control cases who have developed tuberculosis since June, 1938, when the cumulative report for the preceding six years was submitted.

TABLE II.—Tuberculosis in the "Vaccinated" Group since June, 1938.

Name.	Age.	Date of Admission.	Date of Diagnosis.	Type of Tuberculosis Lesion.	Method of Diagnosis.
Fitz Cain ..	19	20.7.36	4.8.38	Pulmonary Tuberculosis Chapter, 2	X-ray. Died 12.11.38. Pulmonary Tuberculosis. Chapter 3. Confirmed by P.M.
Timothy Genus ..	22	8.3.38	19.11.38	Pulmonary Tuberculosis, Chapter 2	Post Mortem (cause of death: Extra Pulmonary Tuberculosis).
James Scarlett ..	20	1.3.38	25.11.38	Pleural Effusion. Suspected Tuberculosis.	X-ray. Still in institution.
Tuberculosis in the Control Group since June, 1938.					
Celestine Carridice ..	30	18.8.37	23.9.38	Had Tubercular Pleurisy but no parenchymatous lesion was found.	Post Mortem.
Blanche Coombs ..	30	21.3.38	8.7.38	Pulmonary Tuberculosis, Chapter 5	X-ray. Confirmed advanced pulmonary tuberculosis by P.M. on 10.7.38.

During the year 1938 there were 179 patients discharged from the institution, 57 of whom had been admitted during the same year. There were 71 deaths among patients admitted during 1938. Therefore, the total deaths and discharges among patients admitted during 1938 were 128 (or 24.8 per cent. of the total new admissions) (29.5 per cent. in 1937). These figures, of course, include the deaths and discharges in the 1938 group of "vaccinated" and control cases, already referred to earlier in the report.

TABLE III.—Deaths among Cases who were admitted and died during 1938.

Age.			10-19		20-29		30-39		40-49		50-59		60-		Total.
Sex			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
P.M.	Tbc.	Latent	1	..	1	..	..	3	1	4	1	1	2	2	16
		Manifest	1	..	2	1	..	2	..	..	..	..	..	..	6
	No Tuberculosis		1	..	2	6	2	7	3	3	3	1	..	5	33
No P.M.	Tbc.	Latent	..	..	..	..	..	..	..	..	..	..	..	..	..
		Manifest	..	..	..	..	..	..	..	..	..	..	..	..	..
	No Tuberculosis		..	..	3	..	4	1	1	1	..	..	3	3	16
Total			3	..	8	7	6	13	5	8	4	2	5	10	71

TABLE IV.—Deaths during 1938 among Cases admitted prior to 1938.

Age.			10-19		20-29		30-39		40-49		50-59		60-		Total.
Sex ..			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
P.M.	Tbc.	Latent ..	..	1	3	6	8	10	4	6	4	2	2	2	48
		Manifest ..	5	3	12	16	4	11	3	5	2	1	1	..	63
	No Tuberculosis ..		2	5	7	9	11	17	11	7	2	8	6	4	89
No P.M.	Tbc.	Latent ..	..	..	1	..	..	..	..	..	..	..	1	1	3
		Manifest ..	..	1	..	1	..	..	2	1	..	..	..	..	3
	No Tuberculosis ..		..	..	11	10	1	8	3	7	1	..	1	1	43
Total ..			7	10	34	42	24	46	23	26	9	11	11	8	251

During the year there were 322 deaths (253 in 1937). In Table III is shown the number of cases of tuberculosis found among those patients who were admitted during 1938 and who died the same year. 6 of these deaths were due to manifest tuberculosis (8.4 per cent.) In Table IV the rest of the deaths are tabulated as occurring in 1938 among individuals admitted to the institution prior to 1938. It will be seen that 68 of the total number in this category were due to tuberculosis, or 27.1 per cent. (25.8 per cent. in 1937).

The total number of deaths from tuberculosis in 1938 was, therefore, 74 as compared with 45 in 1937 and 52 in 1936.

Post mortems were obtained on 255 of the 322 deaths, or 79.2 per cent (In 1937, post mortems were obtained on only 59.3 per cent. of the total deaths.) The lungs were kept for X-ray examination of the excised specimen and for careful dissection.

After Dr. Opie's visit to Jamaica in 1938, it was decided to "vaccinate" every other new admission who reacted only to 1.0 mg. of O.T. to determine whether the "vaccine" would raise the resistance to tuberculosis in this group. The alternate 1.0 mg. reactors on admission, were retained as controls to this "vaccinated" group. At the end of the year we had "vaccinated" 9 individuals of this type and had retained 10 as controls. One of the "vaccinated" cases died but showed no evidence of tuberculosis, and one of the controls was discharged.

Of the 8 "vaccinated" cases still in the institution, 2 have not yet been retested since their original test on admission, but 4 of the remaining 6 have become strong reactors to 0.01 mg. of O.T. Of the 9 controls still in the institution, all have been retested and only 2 show a reaction to 0.01 mg. of O.T. The groups are too small and the period of observation too short to permit of any further comment on those groups at the present time.

The dose of "vaccine" used at the Mental Hospital has been increased during the year. With the dosage previously used, the appearance of sensitivity to tuberculin has not yet been rapid enough nor has a sufficiently high percentage of strong reactors been obtained. The first change made was to use an original injection of 0.3 mg. of "vaccine" in individuals who failed to react to 1.0 mg. of O.T. on admission, followed in four weeks by a similar dose if there was still no response to tuberculin or the local reaction to the "vaccine" was not large. At the end of the year even this method was not producing sensitivity as rapidly as we would desire, and, therefore, in a few cases we gave 0.3 mg. of "vaccine" in each of two sites at the same time; in no case has the reaction to the "vaccine" been excessive. To produce sensitivity quickly

with a minimum of local reaction to the "vaccine" in patients at the Mental Hospital, we have found that our best results were obtained with a total amount of "vaccine" of 0.5 mg. or 0.6 mg., although in some cases still further administration of the "vaccine" has been necessary. The number of individuals who have received 0.3 mg. in two sites simultaneously, is not large enough for us to draw definite conclusions as to its efficacy. As the size of the group increases the Home Office will be advised as to the results.

At this point may I mention that we have had more difficulty in obtaining satisfactory sensitivity to tuberculin among the inmates of the Mental Hospital than we have had in the general population. In the general population a single injection of 0.3 mg. of the "vaccine" has been ample to produce sensitivity in most individuals. However, among the admissions to the Mental Hospital who reacted only to 1.0 mg. of O.T. on admission, a single injection of 0.3 mg. of "vaccine" has likewise produced a high degree of sensitivity to tuberculin.

(b) *Report of Work done at the Stony Hill Industrial School during the year 1938.*

During the year 1938, there were 55 new admissions to the Stony Hill Industrial School. 53 of these boys received tuberculin tests, the remaining 2 having absconded from the school before the test could be given. 46 of the new admissions received X-ray examination of the chest; 5 of the remaining new admissions absconded before an X-ray examination of the chest could be made, and the other 4 new admissions will probably be X-rayed on our next visit to the Institution. No cases of manifest tuberculosis were found in the new admissions and only one case of calcified lymph nodes. One boy was classified as "Diagnosis Incomplete." The remaining new admissions X-rayed showed no evidence of tuberculous infection.

16 of the new admissions were non-reactors to 1.0 mg. of O.T. but one of these was not available for "vaccination." Of the remaining 15 non-reactors, one received 0.2 mg. of the "vaccine" in each of two sites simultaneously, and at the end of the year his tuberculin reaction was +++1.0. The remaining 14 non-reactors received 0.3 mg. of the "vaccine" in one site. Only 7 of these individuals were retested by the end of the year and 5 of the 7 were strongly positive to tuberculin.

74 boys were discharged from the Institution during the year, of whom 16 were "vaccinated" cases from the original group "vaccinated" in December, 1934, 3 were from the group who received the "vaccine" subcutaneously, and one from the group who received the "vaccine" both subcutaneously and intracutaneously. The discharges also included 13 controls for the original group "vaccinated" in December 1934, and 2 controls for the subcutaneous group.

There were no deaths in this Institution during the year 1938.

Of the original group "vaccinated" in December, 1934, there are now only 20 "vaccinated" cases left in the Institution. 15 of these were available for the tuberculin test at the end of the year, and 11 were still positive to tuberculin (3 were positive to 0.01 mg. of O.T.).

Of the group who received the "vaccine" subcutaneously 9 "vaccinated" cases are still left in the Institution. 8 of these were tested at the end of the year and 5 were positive to 1.0 mg. of O.T. but none were positive to 0.01 mg.

Of the group who received the "vaccine" both subcutaneously and intracutaneously, 5 "vaccinated" cases are still left in the Institution. All were tuberculin tested at the end of the year but only one reacted to tuberculin.

Of the group "vaccinated" in multiple sites by Dr. Freund in the first quarter of 1937, 14 "vaccinated" cases are still in the Institution. 13 of these boys were tuberculin tested at the end of the year; 3 reacted to 1.0 mg. of O.T. and one was positive to 0.01 mg.

21 controls of the original "vaccinated" group (1934) are still in the Institution. 17 of these were available for the tuberculin test at the end of the year and only one showed a reaction to tuberculin.

8 controls of the subcutaneously "vaccinated" group are still in the Institution. 7 were tuberculin tested at the end of the year, but not one of these boys reacted.

4 controls of the subcutaneous-intracutaneous group are still in the Institution. All of them received the tuberculin tests at the end of the year but none showed a reaction.

(c) *Special Studies for the purpose of testing different Methods of "Vaccination" Technique.*

BELLEFIELD GOVERNMENT SCHOOL.

In February, 1938, a rural school was selected (Bellefield Government School, Mandeville) in order to determine the efficiency of certain alterations in the dosage and method of administering the "vaccine". A total of 357 children were tested, of whom 112 were found to be non-reactors to 1.0 mg. of O.T. 101 of this group received the "vaccine," but one died before the end of the year with no evidence of tuberculosis. One individual, who was a strong reactor to tuberculin was, through error, also "vaccinated."

37 of the non-reactors received 0.2 mg. of the "vaccine" in one site, and 36 of these were positive to 0.01 mg. of O.T. at some time after vaccination. At the end of the year 90.5 per cent. of the children tested in this group were still positive to 0.01 mg.

8 non-reactors received 0.2 mg. of the "vaccine" in one site, followed seven weeks later by an additional injection of 0.2 mg. Only 4 of these were available for retest at the end of the year, 2 of whom showed a positive reaction to 0.01 mg. (50.0 per cent.)

6 children received 0.2 mg. of the "vaccine" in one site at the original administration and an additional 0.1 mg. seven weeks later. 3 of these were retested at the end of the year and all were found to be positive to 0.01 mg. of O.T.

28 children received 0.1 mg. of the "vaccine" for their original injection, and of these 27 became positive to 0.01 mg. of O.T. at some time after their "vaccination." At the end of the year only 19 were retested, 15 of whom were still positive (78.9 per cent.)

3 children received an original injection of 0.1 mg. of the "vaccine" followed by an additional 0.2 mg. seven weeks later. 2 were positive to 0.01 mg. of O.T. at some time after "vaccination," but none were available for retest at the end of the year.

18 children received an original injection of 0.1 mg. of the vaccine followed seven weeks later by an additional injection of 0.1 mg. 15 of these children reacted to 0.01 mg. at some time after "vaccination." Only 13 were available for retest at the end of the year, 8 of whom were positive to 0.01 mg. of O.T. (61.5 per cent).

MAXFIELD PARK ORPHANAGE.

In May, 1938, we tuberculin tested 15 infants at the Maxfield Park Orphanage to try to determine the most efficient dose of "vaccine" for children under two years of age. 10 did not react to 1.0 mg. of O.T. 9 of these non-reactors received 0.1 mg. of the "vaccine" in one site. 8 of these 9 became tuberculin positive at some time after "vaccination," but at the end of the year only 2 were retested, both of whom were still tuberculin positive. One of the 10 original non-reactors received 0.2 mg. of the "vaccine" in one site but died before the end of the year. The cause of death was given as colitis, but no post mortem was performed.

POLICE RECRUITS.

After Dr. Opie's visit to Jamaica in June, 1938, we arranged through Major Hallinan's office to have all police recruits tuberculin tested with only 0.01 mg. of O.T. 46 of these men did not react to 0.01 mg. of O.T. 45 received 0.2 mg. of the "vaccine" in one site, and all 45 became strong reactors to 0.01 mg. of O.T. after this single administration. One recruit received 0.2 mg. of the "vaccine" at the time of the original injection followed four weeks later by an additional 0.2 mg. of the "vaccine," after which he became strongly positive to 0.01 mg. of O.T.

RURAL HOSPITALS.

In July, August, September and October in 16 rural hospitals a total of 384 nurses and attendants were tuberculin tested using only 0.01 mg. of O.T. In this group 102 were found to be non-reactors to 0.01 mg. of O.T., 98 of whom were "vaccinated" using in most cases 0.2 mg. of the "vaccine" in one site. At the end of the year 84.2 per cent. of these "vaccinated" persons were strongly positive to 0.01 mg. of O.T. Early in November, however, I received a communication from Dr. Opie in which he expressed concern as to the possibility of lighting up old infections by using the "vaccine" in persons who did not respond to only 0.01 mg. of O.T., and therefore many of the nurses and attendants "vaccinated" just prior to the receipt of this communication have never been retested.

KINGSTON PUBLIC HOSPITAL.

In tuberculin testing the nurses at the Kingston Public Hospital, 50 nurses were found to be non-reactors to 0.01 mg. of O.T. 43 of these nurses received 0.2 mg. of the "vaccine" in one site, and 42 became tuberculin positive. 3 nurses received 0.1 mg. of the "vaccine" in one site, and all became tuberculin positive. 4 nurses received 0.2 mg. of the "vaccine" in each of two sites, and 2 have become positive to tuberculin.

CONTACT CHILDREN FROM THE TUBERCULOSIS DISPENSARY.

158 non-reactors to 1.0 mg. of O.T. were referred to us from the Tuberculosis Dispensary for "vaccination." 78 of these children received 0.2 mg. of the vaccine in one site, 96.0 per cent. of whom reacted to 0.01 mg. of O.T. after "vaccination." 47 children received 0.3 mg. in one site, 87.5 per cent. of whom have become tuberculin positive to 0.01 mg. 18 children received 0.2 mg. of "vaccine" in each of two sites, and 44.4 per cent. became positive to 0.01 mg. of O.T. The remaining children received various doses of "vaccine" but none of them showed a satisfactory response. One child at the end of the year had received 0.9 mg. of "vaccine" and still showed no response to tuberculin.

